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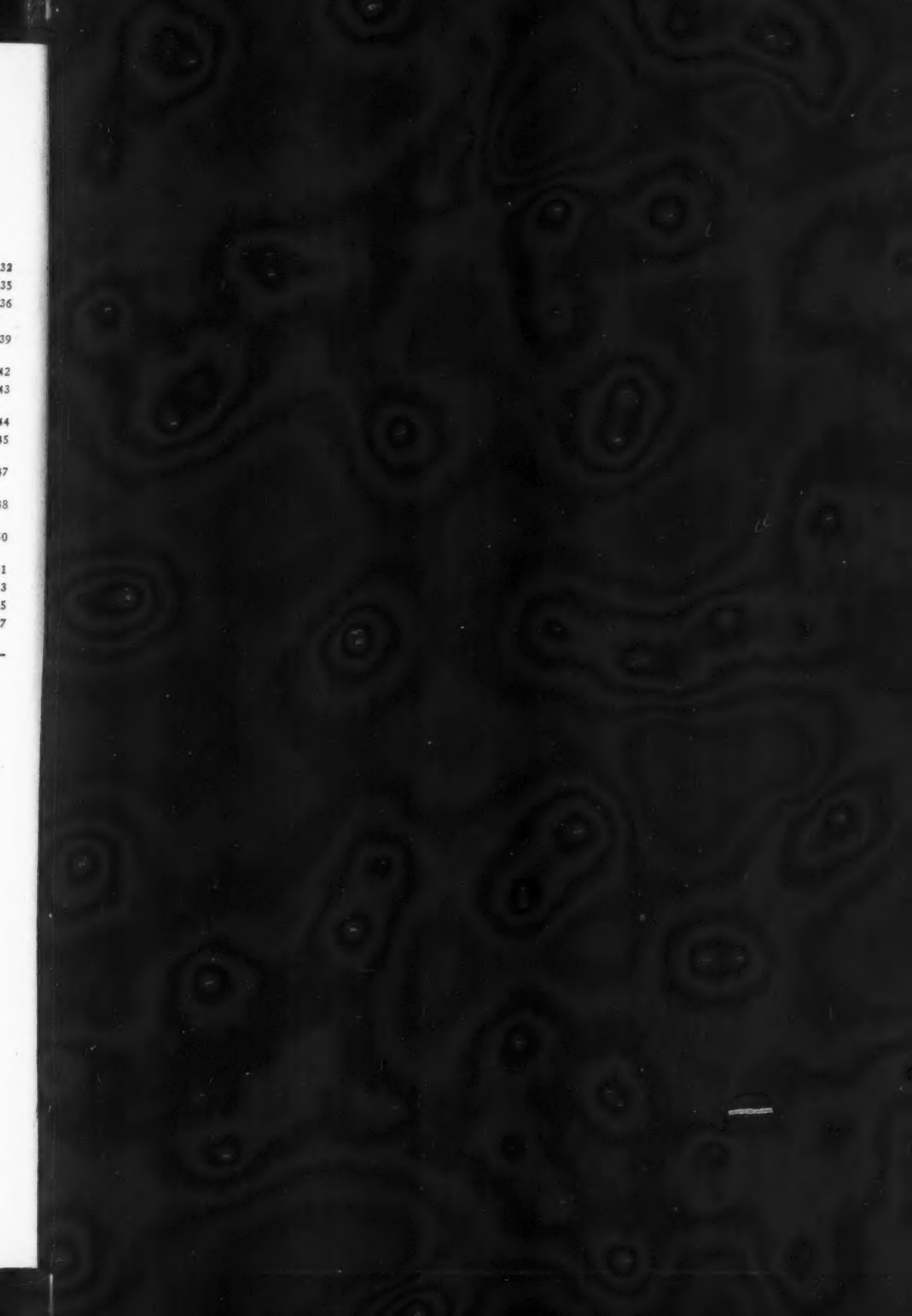

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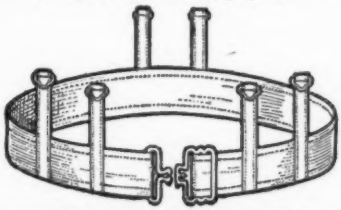

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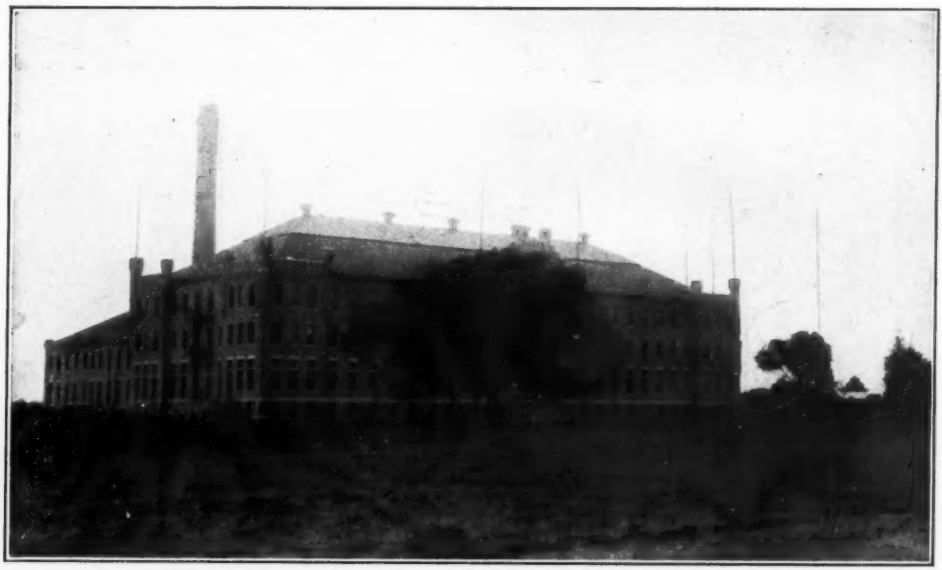

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THE RELATION OF OSTEOPATHY TO PSYCHIC THERAPEUTIC AGENCIES

E. R. BOOTH, Ph. D., D. O.,
Cincinnati

IN order to get an adequate idea of the relation of osteopathy to psychic therapeutic agencies it is necessary to have a clear and firm conception of two things. The first is the basal idea of osteopathy as announced by Dr. A. T. Still, namely, the adjustment of the parts of the body to each other so they will not be disturbed in the performance of their functions; in other words, the normalizing of functions by normalizing structures. As the human body is an organism developed so as to adjust itself to its environments, the adjustment of the individual to his environment and the adjustment of the race to its environment are necessary corollaries to Dr. Still's original propositions and no less important. The second essential is a knowledge of the structure and functions of the human nervous system not only as found in the individual but also as found in the race through countless periods of time, because the nervous system is the avenue through which psychic phenomena manifest themselves in the human organism. No attempt will be made in this paper to discuss the first subject, so familiar to every true osteopathic physician; but the latter will receive the attention believed to be necessary to relate it to the subject under consideration.

The Nervous System

The nervous system is a unit. No part of it is independent. No part is non-essential. It is, for purposes of study and a better understanding of the functions of its many parts, conveniently divided into (1) *the peripheral system,* comprisng the visceral neurons and the somatic neurons which are closely related to each other through the white and the gray rami communicantes. It includes the cranial and spinal nerves which are generally classed with the brain and cord as a part of the cerebro-spinal system; also the so-called sympathetic nerves. (2) *The central nervous system* comprising the spinal cord and the brain. The brain includes the medulla, the pons, the cerebellum, the midbrain, the ganglionar centers of the cerebrum, and the hemispheres of the cerebrum.

The periperal neurons were probably the first to develop in the evolution of the animal kingdom. The visceral nerves being essential to all of the function of animal life have become more independent than others, but their relations to the somatic nerves through the white rami establish their dependence upon the somatic and through the gray rami the dependence of the somatic nerves upon the visceral. Thus the lower forms of animal life including practically all invertebrates are equipped with a nervous system that adapts them to the fullest life in the environment in which they are found. The vital functions are adequately performed through the action of the plexuses and ganglia of the visceral system, and their adaptation to their environment is adequately provided for by the spinal and cranial nerves of the somatic system. The central neurons, generally speaking, were a later development in the evolution of the animal kingdom.

Spinal Cord—The first set of neurons of the central nervous system to to develop were those of the *spinal cord* which is found fairly well developed in some invertebrates especially the articulates. But it is most highly developed in vertebrates and in many of them more highly than in man. It contains most of the nerve centers for the nerves that supply the forces distributed to all parts of the body. The first men-

tioned fact and the further fact that it is supported and protected by the spinal column and that its nerves pass through the vertebral foramina make it clear why it is so easily influenced by procedures familiar to every osteopathic physician.

Medulla and Pons—The medulla, superimposed upon the cord, represents the next step in the process of evolution and closely related to it is the pons. They contain centers of still greater importance in carrying on vital processes, such as the general vaso-motor center, the respiratory center, the cough center, the heart center, the vomiting center, the sweat center, the pilomotor center, the deglutition center, the sucking center, the salivary center, the pupilo-dilator center, and probably others that affect the kidneys and the liver. All these centers are necessary to adapt the animals in which they are developed to their environment and to the purpose of their lives. They also contain the centers for most of the cranial nerves which add so greatly to the scope of the environment of all animals in which they are well developed. The pons is also closely related to the higher centers of the cerebral cortex by projection nerve fibres thus making possible a higher degree of intelligence in the animal as it adapts itself to its ever increasing environment through sight and hearing.

These spinal, medullary, and pontine centers in the lower vertebrates meet practically all of the requirements for maintaining the life of the individual in the environment to which it naturally belongs. They are also just as essential to the highest vertebrates, but their action may be modified by centers in other parts of the brain. These, developed later, have a regulative influence and thus remove, to a certain extent the animal beyond the control of its immediate environment; that is, rather they tend to make it master of its environment.

Celebellum—This organ is a still later development. In the lower vertebrates it is only slightly related to other parts; but in the higher it receives impulses through practically all of the sensory neurons both visceral and somatic. It thus becomes an important factor in maintaining the tone of all muscles and the co-ordination of the complex movements necessary in the life of the higher vertebrates, especially in man.

Midbrain—The midbrain naturally follows with its neuclei of the third, fourth, fifth and sixth cranial nerves, all involved in the delicate co-ordination of ocular and facial movements; and the fifth, seventh and eighth so essential to the maintenance of conditions necessary to sight and hearing.

Ganglionar Centers—Some parts of the interbrain comprising the ganglionar center of the cerebrum are very old in the evolution of animal life. They are prominent in vertebrates. They control actions necessary to the immediate adjustment of the individual to a more complex environment than is found surrounding the lower forms of life. These reactions are called instinctive, emotional, affectional. They may be performed without the intermediation of consciousness. For example, anger manifests itself through the activity of these centers. It was a protective agency in a state of being in which fight was necessary to self preservation. Hence its centers are closely related to many other centers that control functions that are necessary to a fight to the finish.

Hence, in most animals anger raises the hair, shows the teeth, dilates the pupils, increases the heart's action, constricts the peripheral vessels, augments the blood pressure, intensifies muscular forces, stimulates the activity of sweat and salivary glands, inhibits the activity of the kidneys, and lessens peristalsis. All these changes in lower animals are often noticable in man. In the higher stages of civilization they are almost useless; but were formerly necessary to insure quick defense in order to protect the individual against its natural enemies, to enable it to secure food, and to defend itself in the mating necessary for the perpetuation of its kind. So fear, hatred, envy, jealousy, anxiety, worry, suspicion, resentment, etc., has each its specific effects on the function of the body which are primarily designed to protect it and thus aid it in the struggle for existence and the perpetuation of its kind. Their effects are so intense as to be exhaust-

ing and thus become destructive if exercised unduly. On the other hand, courage, bravery, hopefulness, cheerfulness, etc., fortify the body against exhaustive and destructive tendencies. The individual is strong because of his feeling of security. Remembering a former victory, he is happy, contented, self-satisfied, full of reserve power for another contest. In him we have the survival of the fittest. Thus the excessive fear of the weak contributed to his destruction; the courage of the strong contributed to his supremacy. Hence the neurons involved in fear become intertwined with the weak and those involved in courage become associated with the strong. Excessive or unnecessary fear connived with destruction; great courage with life, growth, power. Hence any system of healing, of education, of philosophy, of religion that helps to banish anger and its kindred emotions removes one of the most powerful obstacles to health as well as happiness; and any that develops courage and its kindred emotions is contributing directly to health as well as happiness. Gloomy forebodings have no legitimate place in any of the normal manifestations of intelligence. Cheerfulness is always in order. The same analysis applies to each and every one of the malevolent and benevolent affections and emotions.

Cerebrum—The cerebrum proper, comprizing the cerebral hemispheres, is the climax of complexity and adaptability in animal structure. Its modified form is the structural basis for the differentiation of the higher from the lower orders of animals and especially man from all below him. The substance of the hemispheres is composed of cells with their dendrites constituting the gray part and the axons of the cells constituting the white part. The bulk usually designated the brain includes all the parts above the spinal cord. Besides the parts already considered the meninges or covering of the brain, that is the dura mater, the arachnoid, and the pia mater, may be mentioned. More important still are the blood vessels with the large supply of blood passing freely through them and the lymph spaces (but no lymph vessels) completely investing the blood vessels and cells and so arranged as to be more or less continuous with the larger spaces containing the cerebro-spinal fluid. None of these structures are unimportant to the osteopathic physician in the treatement of any brain disorder, but the gray and the white substance require special attention in this discussion.

The Gray Substances—The gray substance of the hemisphere lies near the surface and is called the *cortex*. Its essential constituents are the nerve cells and their dendrites. It varies in thickness from one-sixth to one-third of an inch. It contains about 9,200,000,000 cells and in the other parts of the brain cord there are probably at least 2,000,000,000. They outnumber probably tenfold the number of human beings on the earth today. They are all there before birth but none of them are fully developed at that time. Development takes place only as they are brought into use, and may continue to old age under normal conditions.

In the cortex these cells are arranged in quite distinct layers. Some authors speak of four: others, as Dr. Louise Burns, consider seven. The difference in the several layers of the cells, their dendrites, and the length of the axons indicate that their function are also different. Really it would be as unreasonable to suppose that any part of so complex a structure has no distinct use as to assert that the bark of a tree or the epithelial lining of the kidney of an animal is useless.

Functions of Cortical Cells

In general it may be said that as to functions the cortical cells are threefold: (1) receptors, (2) distributors, or (3) originators of nerve impulses. Each nerve is related to many others and receives impulses through them from other parts of the body. It may then distribute those impulses but in a modified form determined by the function of the nerves acting as distributors, to many parts of the body through nerves related to the receptors. And if it is in a perfectly normal condition and normally nourished the metabolic changes naturally taking place within it may originate

impulses like those associated with it at some previous time. It is denied by some that any nerve or set of nerves can originate impulses. They say that the origin of the impulses is not in the nerve cells or their dendrites but in external stimuli transmitted through sensory nerves, as sight, touch, etc., to the cells supposed to originate the impulses and that they act only as receptors and distributors.

But no one will deny that the stimulus giving origin to an impulse may be almost infinitesimally small compared with the results. It is as the spark that produces the conflagration. For example, while life exists the stimuli reaching the body from the world without, even during the profoundest sleep, may be, and doubtless are, transformed through the cardiac center in the medulla and into the mighty forces that produce the heart action. The cardiac centers are so constructed and so educated that they will perform their functions as long as

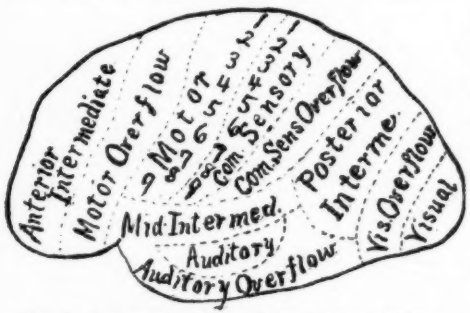

FIG. 1. External surface of the left hemisphere. The numbers on the motor and sensory areas show: 1, hip; 2, trunk; 3, shoulder; 4, arm; 5, wrist; 6, fingers; 7, face; 8, lips; 9, larynx.

life lasts. The same is true of all other nerve centers. Those active in fear may be so sensitive as to invite a response to even a suggestion of fear and cause action in all parts of the body related to it. So that part of the cortex involved in hope may become so nearly self active that "as long as there is life there is hope" may not be simply an encouraging maxim but a real healing force.

Functions of the White Substance

None of these billions of cells of the cortex are isolated. Through their dendrites and axons they are capable of making perhaps twice, possibly a hundred times, as many connections as there are cells. Most of these connections, all of those to remote parts, are made through the axons or nerve fibers which, arranged in bundles, constitute the white substance of the brain. These fibers when fully developed are medullated and thus insure the transmission of the impulses to or from their corresponding cells without much if any loss. There is no short circuiting in a well developed normal brain. The connecting axons are known as:

(1) *Association fibers* when they join parts of the same hemisphere. They are (a) short, when they connect intracortical or subcortical parts; and (b) long, when they connect more distant parts. They are not medullated at birth, hence there is practically no power of control, no power of coordination, by way of the cortex. They myelinate very rapidly as the child is educated.

(2) *Commissural fibres* connect the hemispheres by way of the corpus collosum, the anterior commissure, and the hyppocampal commissure. The corpus collosum is the largest and it becomes larger with intellectual development, showing that the two hemispheres are more surely related and that they functionate together more in the educated than in the ignorant.

(3) *Projection fibers* connect the cortex with the ganglionar centers of the cerebrum, the midbrain, the pons, the medulla, and the cord. These also become medullated with their use. These axons are found passing from all parts of the cortex but are fewest in the frontal areas, the parts that have least direct control over the lower functions. This would also indicate that the frontal lobes act more independently than those involved most in the animal functions.

Cerebral Localizations

The functions of most of the cerebral cortex are fairly well known, but the boundaries are not absolutely established. (See Figs. 1 and 2.) The *primary motor* and *sensory* areas include about one-third of the cortex. They are very slightly developed at birth in the human being but assume

their normal functions very rapidly as the child becomes accustomed to its environment. The *overflow* areas are found adjacent to the primary motor and sensory areas. They seem to be for the purpose of storing up memories of actions of their corresponding primary areas and associating and disassociating them with each other and with the intermediate areas through their connecting fibers.

The *intermediate* areas (the association areas of Fleschig) include practically the remaining two-thirds of the cortex. The *posterior* was the first to develop. Located as it is between the areas through which we gain most of our knowledge of our material environment, its chief function is to co-ordinate and utilize our ideas of the external world. Hence this area is highly developed in animals possessed of cunning, cruelty, etc., and of the persons possessing the highest intellectual development relating to mere material things. The *middle intermediate area* is involved principally in oral language and is so located as to make the motor areas controlling the speech organs directly available; and, by connecting fibers, sight, hearing, and hand movement are intimately associated with it. This was, of course, a later development than the posterior intermediate area and is found scarcely at all in animals below man. The *anterior intermediate area* is the latest as well as the crowning structure of the brain. It is the most recent development of the individual as well as the race. It became necessary when man reached the stage of progress that required him to recognize the rights of others and govern himself, at least in part, by other than selfish inclinations. He had to adapt himself to beings like himself by whom he was surrounded. From these subtle and constantly changing manifestations of personality by the people constituting his social environment, it was but a step to the purely spiritualistic ideas found in all people, that is, the recognition of a power above or beyond their material or social environment. Hence came the addition, so to speak, of the forebrain, the frontal lobes of the cerebrum to take care of these functions. Normally this area is closely related to all other areas, but most directly to the other two intermediate areas, by connecting fibers, because all the phenomena of life had become so entwined as to constitute the marvelous being, man,

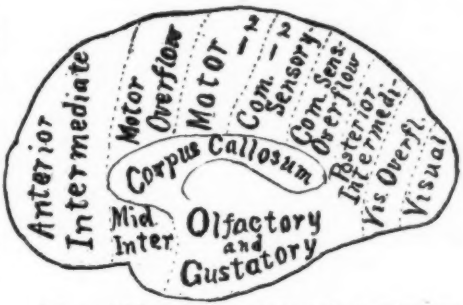

FIG. 2. Midian surface of the right hemisphere. 1, foot; 2, leg.

comprising everything that goes to make up his physical, mental, social and spiritual natures. That the prefrontal lobes are devoted principally to the functioning of social and spiritual ideas is scarcely questioned by late investigators. The American Crowbar case is often cited in proof of this contention but it is often so misstated as to convey a wrong impression. I quote from the "Reference Handbook of the Medical Sciences":

> The American Crowbar Case, 1868, in reality a classical instance of conclusive evidence as to the peculiar functions of the prefrontal area, is still frequently misquoted and wrongly interpreted in medical literature, despite the critical analysis of Ferrier and Mills. The subject of this injury was a young man, twenty-five years of age. At the time of his injury, he was engaged in tamping a blasting charge in a rock with a pointed iron bar three feet seven inches in length, one and one-fourth inches in diameter, and weighing thirteen and one-fourth pounds. A premature explosion drove the bar clean through the frontal region of the skull, entering at the left angle of the jaw and passing out near the sagittal suture in the frontal region. The patient recovered and lived for twelve and a half years afterwards. From a post-mortem examination of the skull it was clearly seen that the whole lesion was situated anterior to the coronal suture, and hence embraced only the prefrontal region. The following report, by Dr. Harlow, of the patient's mental condition after recovery from the injury presents a typical picture of mental decadence:
>
> His contractors, who regarded him as the most

efficient and capable foreman in their employ, previous to his injury, considered the change in his mind so marked that they could not give him his place again. The equilibrium or balance, so to speak, between his intellectual faculties and animal propensities seems to have been destroyed. He is fitful, irreverent, indulging at times in the grossest profanity (which was not previously his custom), manifesting but little deference for his fellows, impatient of restraint or advice when it conflicts with his desires, at times petinaciously obstinate, yet capricious and vacillating, devising many plans of future operation, which are no sooner arranged than they are abandoned in turn for others appearing more feasible. A child in his intellectual capacity and manifestations, he had the animal passions of a strong man. Previous to his injury, though untrained in the schools, he possessed a well-balanced mind, and was looked upon by those who knew him as a shrewd, smart business man, very energetic and persistent in executing all his plans of operation. In this regard his mind was radically changed, so decidedly that his friends and acquaintances said he was no longer Gage.

Liminal Value

The readiness with which nerves respond to stimuli depends upon what is known as their liminal value. If they respond to a slight stimulus they have a low liminal value, if only to a great stimulus they have a high liminal value. There should be a happy medium which may be termed the normal liminal value which is not by any means a constant factor. It varies in individuals and in the same individual under different conditions, but certain essentials prevail in each case. These are normal cellular structure, normal nutrition, and normal exercise. Any departure from these conditions may raise or lower the liminal value and in either case may produce an abnormal or diseased condition. But each neuron or set of neurons has a normal liminal value of his own. For example, the neurons involved in hearing in the musician differ from those of the boiler maker in their connection with other neurons and in their liminal value. A sound may be recognized by the former that is inaudible to the latter, and it may set up a train of thoughts and emotions in the one that are entirely absent in the other.

Again a stimulus through the sensory nerves to the intermediate areas of the cortex that would be agreeable to the person with nerves of normal liminal value may produce alarming symptoms in hysteria or neurasthenia, or psychasthenia. The all-important thing to do in treating all such cases is to lower or raise the liminal value of nerves or centers so as to make them most efficient for that particular individual and to best fit him to his environment. This is always done normally by securing normal structure, normal nutrition, and normal exercise. Any abnormal lowering or raising of the liminal value always interferes with efficiency.

One of the most common causes of this abnormal nervous condition is the osteopathic lesion. This is of first importance. No such lesion can exist without some irritation or depression resulting in a lowering or raising of the liminal value of the nerves involved. If the liminal value of other nerves connected with those directly involved is low also from any cause whatever we have an immediate effect in them also. This we speak of as a reflex or as an indirect effect. Remembering the unity of the nervous system and the countless connections established between its different parts we can see the reason for Dr. Still's insistence upon correction of the lesion wherever found in all cases.

Second only in importance in maintaining a normal liminal value is nutrition to every nerve in any way involved. This may mean all the nerves of the body because of its unity through the nervous system; hence the benefits accruing in many cases from improvement of the general health. In practically all cases there will be found a deficiency of nutrition to the brain and cord which should receive prompt attention. This may be due to any lesion as stated above, but more particularly to any lesion above the sixth dorsal because of the possibility of such a lesion interfering (1) with the circulation through, and consequently the nutrition to, the brain and cord; (2) with the circulation through the lungs and the resulting lack of oxygenation and purification of the blood, thus destroying its nutritive value, and (3) with the forming of the corpuscular elements of the blood in the red bone marrow of the flat bones of

the thorax. The nutrition may be defective also because of (1) insufficient or unsuitable food, which naturally opens up the whole subject of dietetics; or (2) defective digestion, which of course, opens up the whole field of nutrition; or (3) inadequate excretions, which of course, opens up the whole field of elimination and autointoxication or other conditions due to retained impurities.

The third element of importance in restoring and maintaining a normal liminal value is exercise. There is no structure in the human body not intended to do something, and every exercise of its function within normal limits normalizes its structure. Broadly speaking, exercise is simply a process of education and in its ultimate analysis the principal effect of an education is upon the brain. Physical exercise is not simply movement of the muscles, but every consciously directed exercise is also an action of some part of the Rolandic area of the brain, which lowers the liminal value of the neurons involved so as to make them respond with greater ease on all proper occasions thereafter and remain inactive except when their duty calls them to action. We know the same to be true of all sensory areas, and it cannot be any less true of those intermediate areas devoted to egoistic and altruistic intellectual functioning. The student's intellectual faculties are trained through the exercise of his mind upon the studies of the curriculum, which may involve every limited areas of the brain. Other areas are exercised by an interest in and work for one's fellow man, and still others in the contemplation of spiritual things and the activity accompanying such a state of mind. The natural exercise of all areas of the cortex increases brain power to the maximum; the disuse of any part may enable another part to become stronger by intensifying its action, but it must diminish the sum of available nervous power. The greater variety of work now required in most schools and colleges such as kindergarten exercises, manual training, vocational training, social center work, civic training, etc., in addition to the old-time intellectual and esthetic training is making men and women of greater brain power.

The methods mentioned above of raising or lowering the liminal value are natural, hence always in order. But there are other ways of getting similar results that are purely artificial. Practically all drugs, as quinine, strichnine, caffine, nicotine, alcohol, morphine, chloral, cocaine, etc., lower the liminal value temporarily but raise it as an after and more permanent effect. Even so harmless a remedy from a chemical standpoint as castor oil or Epsom salt by continued use raise the liminal value of the intestinal neurons so as to put them out of commission by depriving them of their natural functions. Hence any resort to the use of such remedies should be recognized as only a temporary expediency and fraught with the possibility of great harm. The use of vibrators and other devices for stimulation are not much more justificable.

(To be concluded in July number)

STUDIES IN ETIOLOGY OF EPILEPSY

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THE epilepsies form so large a proportion of our disease studies that great interest in the subject must be manifested by every serious minded physician. Our population is afflicted with one epileptic in every four hundred, so the problem is constantly before us. Almost by chance the relationship between the clinical, the laboratory and the X-ray findings were noted and by following up our records we find a startling uniformity of indican in the urine, ptosis and atony of the colon and petit and grand mal attacks. These facts stimulted our interest to make further studies. The clinical, physical and chemical features are each herein elaborated.

To fully understand what the diagnostic elements to be found in urine are, as a result of proteolysis of animal protein, it is necessary to differentiate those produced by

*In the studies and the cases reported here we have been greatly aided in the clinical work by C. H. Phinney, D. O.; in the laboratory and X-ray work by H. B. Brigham, D. O., and H. E. Beckwith, D. O.

alimentary enzymes from those produced by bacterial enzymes. We here give a brief summary:

(1) Proteolysis by alimentary enzymes—
- (a) Non-crystalline bodies: albumosis, peptones, ammonia;
- (b) Acid-crystalline bodies; lucin, tyrosin, glycocoll, aspartic acid, glutamic acid;
- (c) Basic crystalline bodies: lysin, histidin.

(2) Proteolysis by microbic enzymes—Microbic proteolysis gives rise, in the first place, to the same bodies as those produced by alimentary proteolysis, namely:
- (a) Non-crystalline bodies;
- (b) Acid crystalline bodies;
- (c) Basic crystalline bodies.

But the microbic proteolysis gives rise to still further proteolysic substances, namely:
- (d) Fatty acids, butyric acid, caproic acid, valerianic acid and ptomaines.
- (e) Aromatic series, paroxyphenylacetic and paroxyphenylpropronic and phenols, cresols, indol and skatol.

The bacteria, therefore, act upon the albuminous molecule by decomposing it into bodies of the fatty and aromatic series. These bodies cannot be utilized by the human organism, and they must consequently be eliminated as more or less harmful materials, after having rendered them less injurious by combining them with sulphuric and glycuronic acids in the liver. We must, therefore, seek among the bodies of the fatty or aromatic for diagnostic elements.

The ptomaines are the true toxic substances. Unfortunately no practical method of estimating the ptomaines has been produced. We must, therefore, study the aromatic bodies. The aromatic bodies are not the real toxic substances, but they are produced by the same bacterial enzymes as are the ptomaines.

They may, therefore, serve as indices to the ptomaines. To make this more clear: when we study the air of our schoolrooms we use the amount of carbon dioxide present as the index of its impurity. Carbon dioxide is not in itself toxic, but its presence indicates the degree of toxicity of vitiated air. Baumann has proven that the products of nitrogenous putrefaction are eliminated largely as—
- (a) Sulpho-ethers;
- (b) Aromatic substances.

Dr. Amon "concludes that leaving out organic suppurations, the sulpho-ethers are solely derived from the microbic intestinal putrefaction produced at the expense of the proteins, the nucleo-albumins, the pancreatic and intestinal juices, the bile and the intestinal mucus. The quantity of the sulpho-ethers in the urine is proportional to the intensity of the putrefactive processes in the intestine." This conclusion does not apply to (1) those taking salol, phenol, napthol, etc., (2) those suffering from suppurations and infections in which the bacteria produce proteolysis, the same as in the intestine.

Careful clinical histories in a number of cases of epilepsy in children show that every case has suffered a severe intestinal intoxication prior to the development of epilepsy. All of our cases show the presence of varying quantities of the sulpho-ethers. As our previous discussion would indicate, a very large percentage of children do sometime during life show the presence of indol, skatol, etc.

This does not exclude much intoxication as being the direct cause of epilepsy. The fact that syphilitics may recover without developing locomotor ataxia does not exclude syphilis as the cause of locomotor ataxia. Whether the degree of intoxication is greater in those cases that develop epilepsy than in other cases of a similar intoxication, we have not yet determined; neither have we determined that in those cases which develop epilepsy there is not some ptomaine or group of ptomaines not found in the simpler cases. All cases of epilepsy suffer from marked ptosis of the colon, usually with the kinking near one or more of the flexures. The time required for passage of material through the ptosed bowel is much greater than normal.

We have not in our studies been able to relieve all cases that come to us for treat-

EXPLANATION—Note outline of pelvis in lighter shading below on each side. Dark clouded area top of plate on right side (left hand of plate) represents stomach. Mass in right fossa, cecum and hepatic flexure.

PLATE I.—Examining physician, W. Curtis Brigham; Consultants, H. E. Beckwith, H. B. Brigham, C. H. Phinney; Subject, male, age three years. Case reported May 25, 1915.

History—One year old had convulsions. Improved, six months ago had several convulsions with high fever, vomiting and diarrhea. Has many seizures per day; falls during seizure; constipated, eats everything. Family history good.

General Examination—Healthy looking child. Frequent seizures, must be supported at all times to prevent falling. General condition good.

Structural Examination—Second dorsal sensitive. No other lesions located.

Laboratory Examination—Urine, large quantities of sulpho-ethers. Blood normal; blood pressure 105 mm. Feces shows undigested animal protein.

Skiagraph—Shows prolapse of stomach and colon. Stomach lies one inch below umbilicus and a little to the right of the spine. Transverse colon is seen to contain most of a previous meal, a little lying in the cecum. The right iliac crest is higher than the hepatic flexure. The colon in this case emptied in about thirty hours, showing that the patient was absorbing products of metabolism. The splenic flexure which does not show on this cut was ptosed to a point midway from crest to last rib and sharp.

Diagnosis—Petit mal.

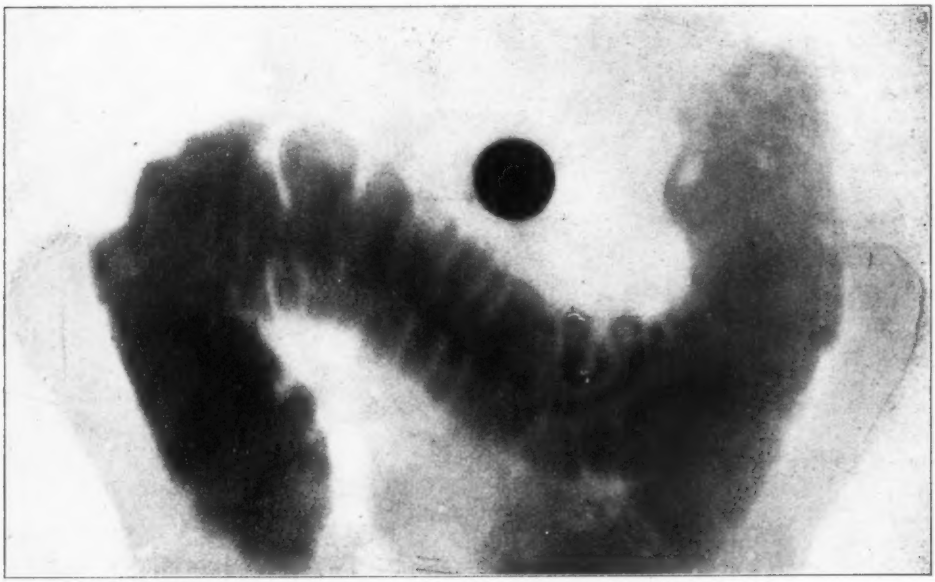
Treatment—Milk diet. Daily flushing of the colon.

Progress—After two months' treatment seizures are fewer. Subject does not fall. Has gained five pounds and can play with other children.

ment, but very favorable results have been obtained as our case records show. Our greatest hope, however, lies in the early recognition and correction of the toxic condition which precedes the appearance of the seizures in every case of epilepsy.

The preventive treatment is largely dietetic. The albuminous molecule which so readily undergoes bacterial proteolysis should be entirely eliminated from the diet, except the lact albumins which are as a rule found in the presence of sufficient lactic acid to inhibit the growth of germs producing ptomaines.

Detailed dietetic consideration requires too much time for discussion in this paper. It is not necessary for us to discuss here hygienic measures. Physically all sources of irritation should be removed, the daily swallowing of large quantities of foul matter from diseased tonsils, infected sinuses and diseased nares greatly add to the toxic



EXPLANATION—Dark spot in center locates umbilicus. Note extreme ptosis of transverse colon and sharp angle of splenic flexure.

PLATE II.—Examining physician, W. Curtis Brigham. Case report written 5/25/15. Consultants, C. H. Phinney, H. B. Brigham, H. E. Beckwith, E. S. Merrill. Subject, female, nine years old.

History—Had convulsions when a child two and one-half years old. Loss of appetite, fever, distention of abdomen, later, Petit mal seizures, as many as forty per day. Constipated, loss of concentration, poorly nourished. Attacks since five years of age. Has had measles and whooping cough. Family history good.

General Examination—Thin, poorly nourished child, no vertebral lesions discoverable. Frequent seizures during which head jerks, eyes fix and stare, does not fall.

Structural Examination—Second dorsal sensitive. No other lesions discoverable.

Laboratory Examination—Urine Sp. gravity 1,016, no albumen, no sugar, trace of acetone, heavy indican. Blood normal; blood pressure 110 mm.

Skiagraph—Shows prolapse of colon and stomach. Plate shows hepatic flexure on level with umbilicus and iliac crest. The splenic flexure lies about 1½ inches higher than the left iliac crest. The hepatic flexure is not as sharp as the splenic flexure. Transverse colon reaches a point 2½ inches below the umbilicus and lies directly on the descending colon as it rises to the splenic flexure.

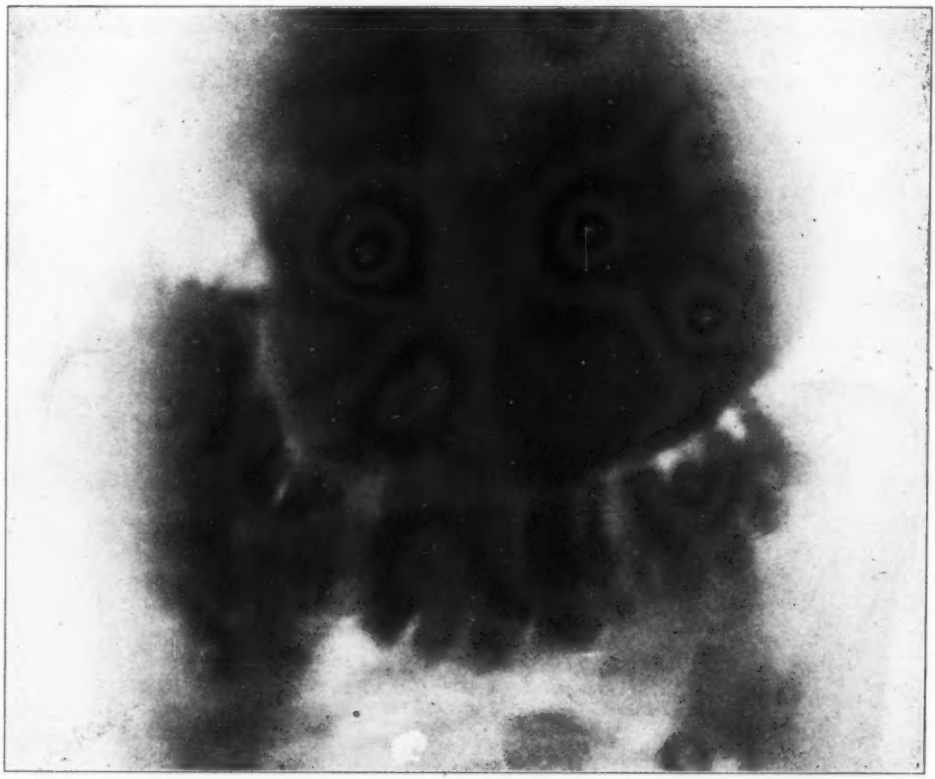
Diagnosis—Petit mal.

Treatment—Lacto-farinacious diet, exercise of abdominal muscles, lifting the prolapsed colon while reclining; sleep out of doors and play in fresh air.

Progress—Above treatment recommended January 1st, 1915. No attacks since April, 1915, when the bismuth diagnosis was made and treatment recommended accordingly.

burden of the emunctories. Spinal lesions may interfere with the proper tone of the bowel, thus favoring the retention of decomposing proteins. Adherent prepuce may irritate the already intoxicated nervous system.

One of our cases showed a congenitally abnormal bowel with accessory appendage



EXPLANATION—Large dark body in center prolopsed stomach. Note sharp angle of ascending colon with transverse at hepatic flexure and prolapse of transverse colon into pelvis.

PLATE III.—Examining physician, C. H. Phinney, D. O. Date 3/25/15. Subject, female age eleven, suffering from epileptic seizures varying in frequency from one per week to forty per night of marked severity, but short duration lasting about ten minutes. No previous sickness except early gastro-intestinal fever, whooping cough and chicken pox. Family history good, habits absolutely regular.

General Examination—General development and tone good, height and weight average. Dentition normal.

Structural Examination—Occiput rotated to right, first cervical anterior on left. Seventh cervical anterior on right. Eighth dorsal to first lumbar posterior. Right innominate anterior.

Laboratory Examination—Urine normal. Blood normal; blood pressure 100 mm.

Skiagraph—Shows ptosis of stomach and transverse colon into the false pelvis. Ascending colon kinked; shows stomach two inches below level of umbilicus, large and to the left. There was a six hour residue in the stomach. Notice that the hepatic flexure is on a level with the right iliac crest. The transverse colon lies very low and it takes some time for the food to pass on a sharp splenic turn. The colon contains a residue after fifty-two hours which is strong evidence of auto-intoxication to the system.

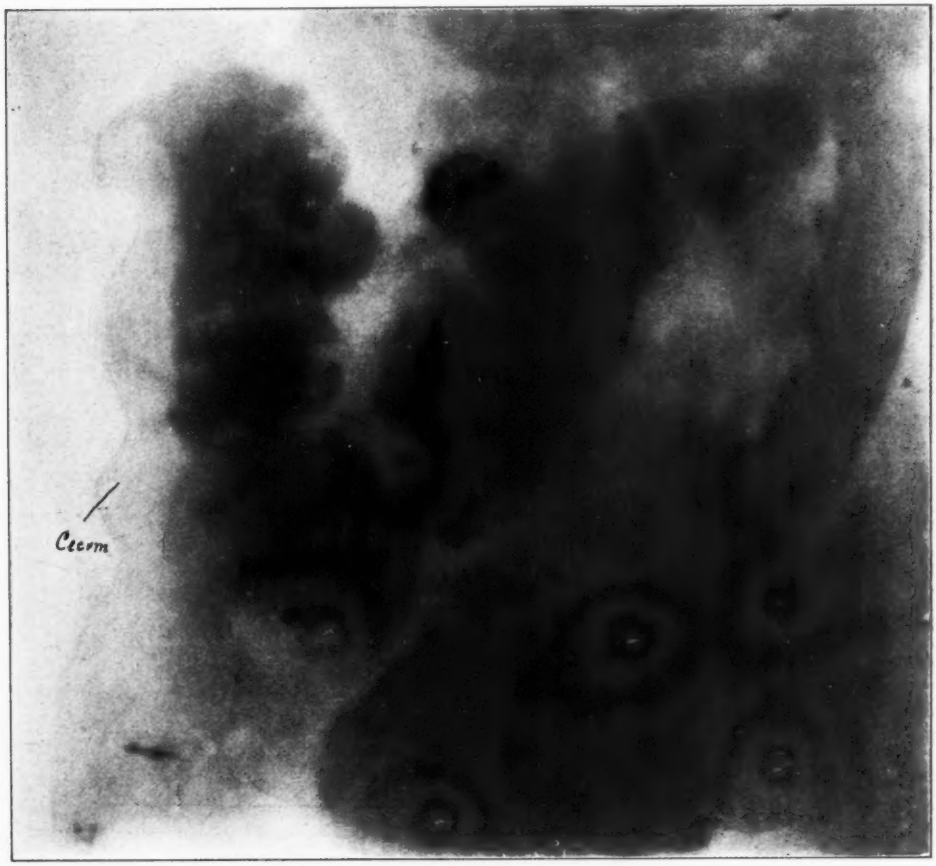
Diagnosis—Epilepsy—grand mal.

Treatment—Correction of existing lesions. Absolute regulation of diet, rest and all habits. Manipulation and exercise to correct ptosis. Rigid attention to correction of intestinal stasis.

to the colon which probably could not have been overcome except by the most radical surgical procedure.

Chas. A. L. Ree, M. D., in the *Journal of the A. M. A.*, March 27, 1915, has shown that many cases of epilepsy will recover entirely if the operation known as the "Lane short circuit" is performed.

To summarize: (1) All cases of epilepsy primarily suffer severe intestinal intoxication; (2) intestinal intoxication is due to the action of abnormal bacterial flora of the ali-



EXPLANATION—Note extreme ptosis of transverse colon making the sharp angles of the hepatic and splenic flexures.

PLATE IV.—Subject child 11½ years old. Gave history of being unusually healthy all through younger life.

History—First epileptic fit came on at school, January, 1914. Since that time the seizures have increased in frequency and severity. In summer the seizures decreased; in the fall increased again and in February of the present year decreased.

Physical Examination—The osteopath who referred the case to us said that the upper dorsal region was very flat at first and the neck stiff. Treatments have corrected these lesions to a large extent.

Skiagraph—The Bismuth plate shows a condition twenty-four hours after ingestion of meal. Notice cecum, transverse colon and descending colon contain the Bismuth meal, the transverse colon being quite full. The hepatic flexure and splenic flexure are both quite sharp. The lowest point in the transverse colon is 4½ inches below the umbilicus. Former plates showed stomach fairly normal in height but flat and to the right and also at the end of six hours meal was about one-quarter full, all of which shows a bad atonic condition.

mentary tract upon animal protein; (3) ptosed and atonic intestines, in these cases are due to the action of ptomaines; (4) physical abnormalities are of secondary importance, but may be the connecting link between the toxic condition and the epileptic seizure; (5) I urge the examination for the presence of sulpho-ethers in the urine of all sick children, especially those suffering from recurrent "billious" attacks; (6) the Society of Clinical Research urges the co-operation of all clinicians in the study and prevention of epilepsy.

FERGUSON BLDG.

RELATION OF OSTEOPATHY TO PARTURIANT WOMEN*

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Preliminary Paper—General Statement

OSTEOPATHY is without doubt the system to which scientific men of all schools of practice will have to look for advancement in obstetrical technique. I say this without fear of contradiction. The obstetrical branch of the practice of medicine is the one field in which less progress has been made than in nearly all other branches. I am referring now to what is usually termed normal labor. I admit that abnormal labors, requiring surgical intervention, have a much improved technique as compared with the cumbersome practice of years ago. But I am confining my remarks and references now to normal physiological labors.

For years the technique taught in the text books has been practically the same, nothing at all new being offered. Yet all the while women were going on bearing children and passing through about the same degree and length of suffering as before. When something new in the line of technique was offered or something which it was supposed would give the desired relief to parturient women it always came from the pharmaceutical field instead of from the physiological.

Why has there been so much talk about "Twilight Sleep?" Why have the newspapers been so full of stories of the wonderful effects of the treatment? Why has such a furore been created among women generally? The reason is quite plain. The articles published have been so full of optimism regarding the merits of "Twilight Sleep" that women after reading them were convinced that when they became pregnant all that they had to do in order to have an easy childbirth would be to have the physician give them a shot or two of the "famous dope," go to sleep and wake up in due course of time with everything all over and in good shape. Few if any of these articles spoke of the dangers attendant upon the use of this treatment. They spoke only in glowing terms of the marvelous effects it had, and how easy it was for women to pass through childbirth.

I had also been looking for a painless method of childbirth, but I was not looking for it in drugs. In fact I knew it could not be found in drugs because I happened to be fortunate enough to be associated in hospital work as long as ten years ago with people who had at that time given hyocine, (which is made of henbane, the same plant from which scopalomine is derived), a thorough trial, and had discarded it along with the other drugs as dangerous. I was familiar with these conditions and experiences of other practitioners and I also knew that normal labor is a physiological act. I could not understand how a physiological process could be interrupted by a poisonous drug and any good come to the patient therefrom. I am speaking now not altogether from an osteopathic standpoint of what I learned of obstetrics in school, because as much as I dislike to say it I never saw a single case of labor during my entire course of study. As near as I ever came to it was Dr. Bill Smith's rag doll with which he used to demonstrate obstetrical technique and which no doubt a number of those who read this will readily recall.

I said in the beginning that scientific men of all schools would have to look to osteopathy for relief in this class of work. Whether they recognize it now or later they

*This is the first of a series of articles on this subject. The second will appear in the July number.—EDITOR.

will eventually have to do it because it is the only system in the world that offers anything like reasonable relief, in a physiological way, to parturient women. It does this and it does it in full measure, because it is itself applied physiology. The technique we have now is crude, but why shouldn't it be? Little teaching has been done in the schools along this line compared with what should be done. Students are given the technique and are allowed to witness five or six cases and are turned out to practice. How many graduates have, during their school work, attended one case of confinement from beginning to end absolutely unattended? This question applies to allopathic as well as osteopathic schools. Entirely too little attention is given to this subject which seems to me to be the greatest and one of the most important branches of therapeutics. It is this lack of teaching and thought that allows such treatments as "Twilight Sleep" to gain headway. It is dangerous, however, and it has not taken the leading accoucheurs of the country long to recognize it as such, and to discard it. It has already been abandoned in the Jewish Maternity, Sloan Maternity, and Blackwell Island Hospital, New York; Michael Reese Hospital, in Chicago, and the City Hospital, St. Louis. These institutions all tried it and some were strong in its praise at first. I have copies of articles covering many pages praising this treatment coming from one of these institutions. (The Jewish Maternity of New York).

Women have been intensely enthusiastic about "Twilight Sleep," but why shouldn't they? They are the ones vitally interested. They will be just as interseted in osteopathic obstetrics when we wake up enough to let them know what a wonderful system we have. Scarcely anything has been published on this class of work. Seldom an article is seen in one of our magazines on the subject of obstetrics. Osteopathy offers the only real chance for advancement in this class of work, as I said before, because every physician regardless of his school, knows that anything that is given to allay the pains of childbirth, in doing this, interferes with the proper functioning of the parts involved in the process of labor. Consequently any good that would be obtained for the parturient woman would be offset or counter-acted by the danger she would be subjected to by interfering with the proper functioning of the centers necessary to normal labor. The medical profession recognizes, as a fact, these conditions and while they are not willing to use these new treatments except in very select cases they have not been able to offer anything better.

Women, however, deserve the very best services that can be given them, and they not only deserve it but they are demanding it, and when they know what the osteopath can do they will have no hesitancy in employing him for this work. I believe that each city should have at least one osteopath who devotes his time to the practice of obstetrics and that every other practitioner in the city should support him in the work. I say this for the reason that I have found it impossible to satisfactorily attend to a general practice and attempt to do obstetrical work also. One is invariably wanted on an obstetrical case when he is needed somewhere else if he attempts the general practice in connection with it. Then also, if he devotes his entire time and thought to confinements he can and is bound to become more proficient than if he only sees a case occasionally.

I will give you a general idea of how I attempt to do the work for myself and for the profession in this city. Nearly every case needs antepartum treatment, whether it needs it or not, every case will be benefited if antepartum treatment is given. When I am engaged to confine a woman, who is the patient of another practitioner, I go and make the examination. This examination includes the measurements of the pelvis, the position and condition of the bones of the pelvis, careful inspection of sacro-illiac articulation. History of previous pregnancies and labors, if a multipara. Physical examination of heart, lungs, kidneys, urinalysis, etc. Condition of ovaries, history of menstruation, etc. The methods of examination and the findings are of course dependent upon the stage of pregnancy. When I have satisfied myself of the condi-

tion of the patient I then confine my findings to the physician who referred the case to me, and advise with him regarding what should be done and send her back to him for treatment. He keeps a record of the progress of the case examining the urine once each month until the eight month and then once every week until labor. If any unusual symptoms arise he notifies me and we again visit the case together and decide on whatever additional treatment we deem necessary. If the case progresses normally I do not see it after the first examination until I am sent for when labor begins. After delivery I watch the patient daily for about nine or ten days and she is dismissed with instructions to call her family physician whenever she needs treatment. I never see the patient except at the suggestion of her physician. This establishes firmly in the mind of the woman that she is and has been at all times the patient of the other physician. It is a pleasant and satisfactory procedure for all concerned. This of course applies only to referred cases.

My own cases I treat and have full charge all during pregnancy and the puerperium. Antepartum treatment is, in my opinion, responsible for a large amount of the relief afforded women in labor. Often cases that would ordinarily give one a great deal of trouble and cause considerable suffering to the woman are delivered in a very easy manner, no laceration and a minimum amount of pain. Long labors are a thing of the past with osteopathic technique. I used to hear a great deal about waiting and let nature take her course. I did this for a long time because I believed it to be much preferable to trying to hurry a delivery by resorting to the use of forceps. I have since learned, however, that labor can be hastened after it has once begun and can be brought on in usually not longer than three hours and in some instances less than that.

I do not believe that an absolutely painless labor can be conducted. That could only be brought about by the use of narcotics or anesthetics and that brings us back to the dangers of "Twilight Sleep." With the woman thus drugged, its advocates do not claim that there is no pain, but that the patient is unable to remember that they had any pain.

When the time comes for the fetus to be expelled from the uterus and the uterine contractions begin, it is possible by osteopathic treatment to increase cervical relaxation, as well as increase the contractions of the fundus and to reduce the amount of pain. One would naturally suppose that to apply treatment to spinal centers which would increase contractions of the fundus and abdominal muscles, would also contract the cervix and intensify the pain. Such, however, is not the case. The mechanism seems to be so perfectly arranged and carefully adjusted that treatment at the proper time and to the center indicated will simultaneously produce contractions of the one, relaxations of the other and reduce pain. The pain I refer to is what I should term "physiological."

This brings up the subject of abortion being produced by spinal stimulation. I have had some argument in regard to this, but my opinion is still unchanged. I believe that unless there exists a pathology of some sort, with a tendency to abort, and with the uterus in a condition to be "fired" by the slightest touch, that it is absolutely impossible by spinal stimulation to produce an abortion. It can be done if the uterus is pressed sufficiently hard between the hands to break the uterine tissues. Uterine contractions sufficient to serve as expellent forces are produced by spinal stimulation only after the fetus has reached full term. I refer now to normal conditions and to cases where labor has actually begun. Women who have had abortions and miscarriages and who are very anxious to have a child can very often get themselves in a condition where they can pass through the entire pregnancy and have a normal labor by taking osteopathic treatment and keeping themselves constantly in the hands of a competent osteopathic physician. These women require a great deal of attention and care but both physician and patient are usually well rewarded for their trouble. These conditions all along suggest various

treatments and procedures, but the object of this article is only to bring to the attention of the profession the very vital relation that osteopathy bears to the pregnant woman and our duty to serve as teachers as well as practitioners in giving publicity to this branch of practice. It means too much to the women of the nation, also to the profession, for it to be longer neglected. I believe that the osteopathic profession can add from two to five million dollars annually to its income if the practice of obstetrics is taken up and worked as it should be, and as many hours of suffering saved to the women of the land.

In the small towns, each osteopathic physician will have to do his own work, but in the cities there is no reason why certain osteopaths should not specialize and do this class of work for the other practitioners. There is at least this amount of practice that the osteopaths are not getting and it needs only to prepare itself to do the work and let it be known. Getting literature of the proper kind into the hands of women and being persistent about it and it is only a question of time until each osteopath can increase his annual income several hundred dollars, but more important, we are doing a work we are sent out to do, and we are adding to the prestige of our profession more than in any other line of practice. It is absolutely the best publicity work we can do. It seems to me that it is vastly worth while.

In other articles I will discuss technique and the procedures in different kinds of obstetrical cases. I know that there is a feeling in the profession that this work should be done, as I have had many letters from members asking regarding the work and where they could get clinical experience. I shall probably have a clinic before long where I can issue clinical data at regular intervals giving reports of special cases and also arrange for those who are near enough to come in and spend some time at the clinic and do some special work. I would like to get in touch with those osteopaths who are interested sufficiently to take up the work and specialize in it with a view to organizing an Obstetrical and Gynecological Society. Those who are interested will please communicate with me at their earliest convenience.

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STANDARDIZATION OF TECHNIQUE

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In order to define some of the principles that are basic to the standardization problem, we should have a fairly clear conception as to just what is meant by a lesion. The expression of maladjusted tissues will naturally be dependent upon the locality of the pathological change; but at the same time if the body is constructed upon definite mechanical principles, it is simply a question of determining the mechanical principles involved. No doubt the effects of heat and cold, of infections, of over-fatigue, of slumped postures, of unhygienic mental and physical habits, and of many other factors, as well as traumatism, tend, directly and indirectly, to compromise the harmonious or consonant action of the component parts of the bodily structure.

The extent of the functional change is not always commensurate with the physical damage, because locality of the involvement is an important factor. Then, many changes are relatively unimportant for nature is constantly striving to maintain normality, and thus innumerable lesions are temporary; in this class one's general resistance, hygienic measures, and rest only are required. Another class of lesions are those of more serious and extensive involvement, which require some assistance in order to normalize. These are the cases which general manipulative measures and the like more or less readily correct. But beyond these are the deeply seated and anchored lesions, as we have repeatedly said, that require a greater or less degree of skill to adjust. To correct these one must have some knowledge of both diagnosis and mechanics, based upon actual experience, and

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an art that exemplifies preciseness; it is this class of cases that we are specially interested in. But we should not lose sight of the fact that any classification of lesions is purely arbitrary. There is no line of demarcation; it is simply a graduation, and a very gradual one, of one so-called class into another. This is one great reason why all methods of manual treatment secure some results, but this is very far from stating that all methods have equal merit.

The osteopathic lesion* as we all know is a maladjustment of some tissue or tissues or organ. Here we will confine our argument to the vertebral lesion. The vertebral lesion that has become so anchored that nature is unable to spontaneously or automatically adjust or that some general measure will not suffice is the spinal lesion that demands special consideration. The mechanical change as we have repeatedly said must follow the laws of structural expression. And it is equally certain that in order to adjust a structural deviation, the outgoing path must be retraced. These are the fundamental points to all technique, no matter what so-termed method is employed. A study and application of these two points constitutes the problem of standardization.

Now as we see it there are two "schools" of technicians in the osteopathic profession; although we have no desire to labor this point. The one may be termed the "physiological," and the other the "dynamo-mechanical." Remember we are dealing with the anchored lesion, the lesion wherein general measures will not suffice.

We will refer to the Appendix for considerable of the data that is basic to the "physiological" method. But as a precautionary measure, we must emphasize that this data is applicable only to a certain extent to the lesioned spine, for the experiments upon which the conclusions are based were derived from the movements of the normal spine. No doubt a reversal of the physiological movements that produced the lesion (for a lesion is a maladjusted tissue that has passed beyond the confines of normality, that is, the type of lesion we are considering here) will adjust the tissues. It goes without saying that the work must be precise, that is, skillful and specific. This is a method that has much merit. It demands absolute diagnosis, a thorough knowledge of the physiology of spinal movements, and most careful attention to leverages.

This method is closely related with any scientific system of corrective spinal exercises, the so-called medical or corrective gymnastics. An extension of this carries us over into the field of spinal orthopedics. The gradation between the two fields is intimately associated.

The disadvantage of the method is the frequent difficulty of quickly and readily localizing the leverages—that is, so controlling the field of operation that preciseness of fulcrum determination and placement without a resultant loss of applied force. In a word, it is frequently difficult to render the power arm effective owing to the absolute preciseness necessary of axis or fulcrum placement; for one must have such control of both patient and field of manipulation that none of the applied force is dissipated. In our opinion, this method calls for a greater expenditure of energy upon the part of the operator.

Then there is another difficulty, which we have referred to, this is the law of spinal movements in the gross (spine or region taken as a unit) where lesions have occurred are not the same as in the normal spine. This adds to the difficulty in both diagnosis and technique with probable loss of effectiveness.

We believe that in the ordinary field of osteopathic lesions there is another method, although over-lapping the above, that has the added advantage at times of greater efficiency. We should remember that the division is somewhat arbitrary for all methods that are scientific must express and

*The primary anchored osteopathic lesions (vertebral) is usually confined just beyond normal physiologic movements (subluxation); although, no doubt, in certain instances, the lesion is fixed or confined within normal physiologic movement. Secondary or compensatory lesions are fixed within the range of normal movements. Many of these are mistaken for primary lesions. These are the ones that are readily adjusted, and not infrequently the operator repeatedly corrects them, thinking he is attending to primary lesions.

actualize the laws of spinal mechanics, but not necessarily all of them in a single operation. The second method, in lieu of a better term, we have named "dynamo-mechanical." This method to a certain extent ignores the *general* physiological movements of the spine and individualizes its work in accordance to the simple mechanics of each lesion. Of course all methods in order to be precisely specific must pay great attention to the detail of each interosseous lesion. In view of the fact that many lesions are established via the muscular route implies a "physiological routing," and consequently a reversal of the physiological movements which include a greater or less section of the spinal column will suffice. But it will not be effective in all cases where there is severe anchorage, and perchance, adhesions. Then the detail localized "dynamo-mechanical" method must be requisitioned. But any method must depend for its effectiveness upon the retracement of the out-going path.

The "dynamo-mechanical" method may to a certain extent ignore the general physiological laws, but not entirely, and obtain results. And it will secure better and quicker results where the lesion is refractory. Still do not misunderstand the facts that there must be some overlapping and blending of features and methods in both "schools," for we are dealing with the same detail structure, but not always with the same manner of approach.

Specificity in technique has always meant to us to seek out in minute detail the exact character of the interosseous lesion, whether it be an isolated lesion or a series of them. This places the work upon a solid and scientific mechanical basis. To a large extent, the art of technique to Dr. Still, as we understand it, means precise detail work to every single lesion, although in a series of lesions that are usually expressed in the gross by some noticeable disturbance of configuration or a curvature, there are one or more "key" lesions, which, if unlocked or released, will so condition the rest, secondary or compensatory lesions and mechanical changes, that comparatively little attention to these is required.

This is the basis of the "dynamo-mechanical" work. It presupposes an exact knowledge of local joint structure and its mechanics. It is a problem of: first, careful diagnosis so as to meet the exact status of anchored misplaced tissues; and, secondly, of power arm, in the mechanical sense, placement. This method has the special advantage, although not always the exclusive one, of a forcefully localized mechanical efficiency.

We separate and define the two methods in order to emphasize the distinct features. Still, no doubt, a blending and adaptation of both will secure the best of understanding of spinal mechanics (anatomy and physiology) with a consequent approach to the greatest possible efficiency.

"Exaggerate the lesion" principle or "gaping or separating the lesioned parts," is the usual modus operandi of the "dynamo-mechanical" method. This can not be intelligently accomplished without detail information. To exaggerate simply means to release the parts so that an effective leverage can be secured. The common mistake made here is not in failing first to release the parts, but in failing to maintain the release or exaggeration until the moment, synchronously of initiating the leverage force or retracing the out-going path of displacement. If this is not done the probabilities are the technique will be a failure. This is rather a difficult thing to learn and to tactually appreciate, but upon this one feature rests the success of the method.

Now in comparing this method with the physiological, the utilization of so-termed physiological movements, of some combination of side-bending-rotation, for example, the greatest distinction, as we see it, is one of effectiveness of leverages.

The "dynamo-mechanical" method is specially applicable to the markedly anchored lesions. Both fields have a legitimate and, to a certain extent, exclusive usage. And either personal efficiency or standardization should consider the exclusive features as well as the common ground of association. Remember that outside of the surgical field the osteopathic lesion

(here) is an exaggerated physiological (beyond normal) anchorage.

Flexion, hyperextension, traction, rotation, side-bending, etc., are all, in various combinations, factors in lesion correction. The unified whole must be the basic ground and any one method should not, in fact cannot, always be utilized exclusively. One method merges into the other for all are expressions of a combined and definite unity, no matter how complex the definition of that unity may be. The usual part of lesion production must be the physiological route, and this is the reason why the gamut of lesion adjustment embraces laws of hygiene and environment through exercises and general manipulations to definite and localized specific adjustment. Muscular imbalance and traumatism are the two chief etiologic immediate forces in lesion production. A muscular lesion may be primary, and its effect upon spinal movements may be to confine the same within normal range (likewise an impaction, or tilting of vertebrae). But here we are specially considering the field beyond this.

The "Thrust" is often used in technique: it is simply a method of force application (traction and force). It can easily be abused the same as indiscriminate traction. It has a legitimate usage, but diagnosis and leverage placement should be exact and prior to the attempt, or else harm may follow.

There is a feature of this work, standardization, and a big one, too, that, in our opinion, should be as clearly understood as present knowledge of the osteopathic lesion permits. This is a specification of technique, which in reality, upon broad lines, is synonymous with standardization. It matters little, comparatively (therapeutically), how a lesion is corrected provided it is really corrected and in such a manner that the tissues remain so, and that shock to the patient and laborious effort to the operator is minimized. Mere mechanical displacement of the osseous tissues is not the alpha and omega of lesion pathology. But upon broad lines it is basic, for the bony tissues is the veritable mechanical foundation of the body.

All chronic lesions, generally speaking, are composite lesions. Muscular, connective, and ligamentous tissue changes, as well as the time element, play a huge role in their production. Aside from traumatism, it takes time to produce pathology, and for this reason it frequently takes time to correct, adjust and restore the tissues involved in a lesion. Therefore, diagnosis must be considered, not only as to actual present status of the parts, but what is of great importance the many factors of the etiology that makes lesions possible.

It is not our purpose here to discuss etiology of the lesions but every one knows this includes a tremendous field, which in reality is basic to the healing art. Reduction of the lesion study to a mathematical basis is, in our opinion, an important study of standardization, for this means an outline of mechanical factors and resultant forces that not only make a lesion possible but also depicts the status of the lesioned parts and foretells the lines of procedure in the adjustment. But we should not neglect the field of lesions where displacement of tissues have not been carried beyond the confines of physiological (normal) movements, but instead rigidity of tissues and limited and restricted movement is well within the physiological range.

These are the cases that require increased movement by specifically overcoming the contractures, ligamentous thickenings, adhesions and impactions that produce the limited motion, for the effect (pathology) upon the nervous impulses is probably of the same character as the markedly rotated lesion, although the conditioning effect upon the rest of the spine may not be so extensive. Then in addition there are interosseous lesions that are characterized by "tipping" of the articular facets. Hence our statement relative to "specification" of technique work, a little farther on the emphasis placed on etiologic factors, and all showing the necessity of restoration of "joint motion" by both detail mechanical effort and attention to the tone and balance of soft tissues to make the work permanent.

The first step to the appreciation of the mechanical principles involved is to care-

fully note the illustrations and text in some excellent anatomy like Sobotta-McMurrich and apply the same to an articulated spine. Better still would be a careful dissection of a cadaver. A very fair substitute would be a dog; and there is no one so situated but that he can dissect a dog. In some ways dissection of a fresh subject, an animal, is the better. In no other way than dissection can one obtain a clear knowledge of the unity of action, the blending and co-ordination of all the muscles and tissues as in dissection. Just as soon as we separate the component parts and attempt to grapthically depict them, we sacrifice a certain unity of action. After we have a fair knowledge of the constituent parts and their mechanical interaction we are then in a position to apply the same to the living body. We are then ready to symmetrize and standardize our technique. This can only come piece-meal, but an attempt can be made.

Technique is a problem of release and leverages; but before we can apply the leverages intelligently, we must have some knowledge of the muscular action, the force that made many of the leverages possible. A study of the physiology of the various muscles of the back, as well as the ligaments, is necessary. Then comes the form of joints and the relation of the joint to the entire spine for these factors determine the direction and character of the lesion. The parallelogram the polygon, and the resultant of forces applied to the factors of spinal movements would be an instructive study.

It is manifestly impossible to touch upon more than a few principal features in a talk of this kind. To illustrate a blending of the physiologic and dynamo-mechanical methods we quote the following from Frank C. Farmer, D. O.:

Individual lesions occurring in a scoliosis present problems in the correction thereof quite opposed to similar lesions occurring in the more normal spinal status.

If we accept the contention of Lovett to the effect that functional scoliosis is a reality, it is clear that an individual lesion occurring in a functional scoliosis is dependent upon different forces from that producing a lesion in an organic scoliosis. An individual lesion in a scoliosis may be defined as one or more vertebrae occurring in a change of such magnitude, which has, by other forces than that producing the scoliosis, deviated from the path pursued in the production of scoliosis. This would exclude, then, those vertebrae which apparently are but an exaggeration of the scoliosis, i. e., the so-called cap of the scoliosis. These separate forces, therefore, will act either as a restraining elevator or depressor of the individual vertebrae or a combination of restraint and either of the others.

The net result of these opposing forces occurring in a functional scoliosis is to produce an eversion of the vertebral body and an inversion of spinous process toward the mid-line.

In the organic scoliosis, the result is an inversion of the body toward the mid-line and an eversion of the spinous process.

This condition has been compared crudely to a rail-fence spine, because of the comparative alternations in the position of the spinous processes.

A study of the producing forces and the resultant positions of the vertebrae will demonstrate first the importance of painstaking diagnosis and secondarily the difference in corrective technique. The fundamentals of an ideal technique must be immunity of shock to the patient and simplicity and ease for the operator. In the face of such a complication, it is evident, a combination of physiologic and dynamo-mechanical methods is essential.

As an illustration, let us assume a lesion of the eighth thoracic occurring in a second to twelfth thoracic functional scoliosis. The vertebrae of the general scoliosis are rotated with bodies inward and spinous processes outward. To be properly called a lesion, the eighth thoracic must be a reversal of this, namely, body rotated externally and spinous process internally. Reduction of such a lesion would mean a replacement to a position in which the eighth thoracic becomes an integral part of the scoliosis.

The functional scoliosis can be nearly eradicated by simple extension of the spine and during such traction the eighth vertebra may be corrected by gradual pressure upon the transverse process presenting in the convexity of the curvature. In the organic scoliosis conditions are reversed. The bodies of the vertebrae are to the convexity and traction fails to eradicate the curvature.

A rotation lesion of the eighth will present the body of the eighth vertebra rotated toward the concavity and the spinous process rotated convexly. Technique of correction utilizes a combination of the physiologic and dynamo-mechanical. Exaggeration of the scoliosis rotates the bodies toward the concavity, plus traction maintain during such exaggeration, plus pressure directed to the transverse process upon the concave side. Given an organic left scoliosis from second to twelfth thoracic with a rotated eighth lesion, we have this vertebral body rotated con-

cavely, the right transverse process more prominent than its fellows.

With the patient seated upon the table and operator back of him, the operator passes his left arm over the left shoulder of the patient and beneath his right arm. The patient's head rests against the left shoulder of the operator as traction is exerted against the right chest of the patient. This exaggerates the scoliosis and rotates all of the vertebrae toward the normal. Traction is then exerted and pressure made upon the right transverse process of the eighth. By maintaining both exaggeration and traction the eighth can be easily worked into line with its scoliosed fellows.

To a certain extent every interosseous lesion is a law unto itself, depending upon muscular and ligamentous pathology and structural formation. The limits of lesion possibilities are the limits of the expression of muscular force, ligamentous restraint, and osseous formation of the individual

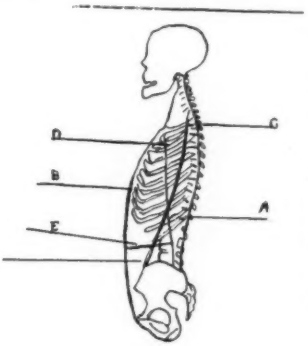


Fig. 1—a, Posterior longitudinal muscle pull (sacrospinalis); b, anterior longitudinal muscle pull; c, oblique descending muscle pull; d, oblique ascending muscle pull; e, transverse muscle pull. (Lovett after Feiss.)

vertebrae, the different regions of the spine and the spine as a unit. Aside from traumatism, the muscles and gravity are the executing force, and the forms of joints and curves the factors that determine direction.

In the first figure is presented:

The scheme of the torso musculature indicating the direction of the various muscular pulls. * * * The spine lies toward the back of a more or less cylindrical muscular tube of which the abdominal muscles form the front. Of muscles directly attached to the spine there are two varieties: (1) muscles running from one part of the spine to another part and to the head; (2) muscles running from the spine to the pelvis or shoulder girdle. The abdominal muscles by their attachment to the thorax, which is comparatively rigid, have an action on the spine. By the combined action of these three the erect position is maintained, or any variation from it is accomplished. In making a side flexion of the spine from the

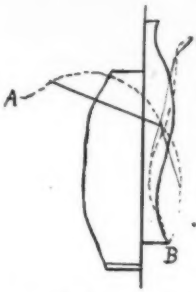


Fig. 2—Diagram of the spinal movements in a living child. Solid lines show the normal position. Dotted lines forward bent and hyperextended position respectively. (Lovett after Englehard.)

erect position, for example, no one muscle or group of muscles is alone active, but it implies a concerted and co-ordinated action of all groups mentioned, as well as of the muscles of the lower extremities, to keep the balance and perform the bending.

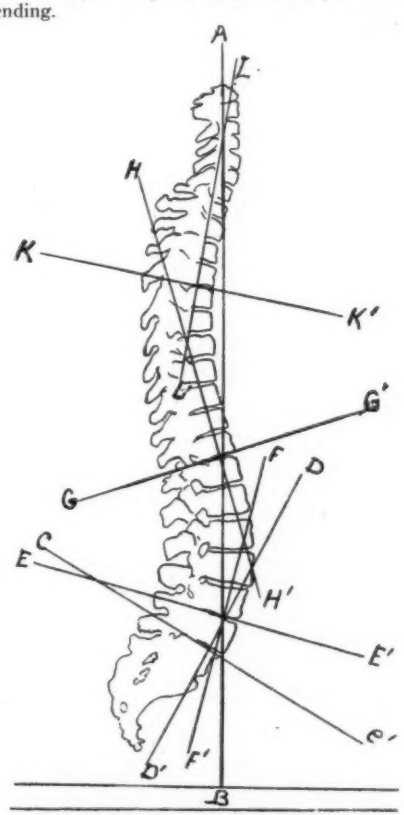


Fig. 3—AB represents the gravity line of the body; CC′ the surface parallel to the bodies of the fifth lumbar and first sacral; DD′a line right angle to this and passing through the axis of the fifth lumbar. In EE′ and FF′ is presented the similar relationship to the fourth and fifth lumbars. GG′ and HH′, and KK′ and LL′ similar relationships to eleventh and twelfth dorsals and fourth and fifth dorsals respectively.

In this connection we should not neglect the central tendon of the diaphragm from its connection to the upper lumbar and upward to the cervical region and its important relationship to correct breathing. Vitiated breathing and the slumped posture from wrong habits and over-exhaustion are prolific sources of disturbance to the torso musculature.

In figure two is presented two very important spinal movements. A study of this should be made in connection with physiological movements of the spine. (See Appendix.) Lesions that are produced when the spine is flexed or hyperextended will vary in character from lesions that arise when the spinal position is rotated or sidebent, the same as lesions will vary in character when there is a certain state of muscular imbalance and inco-ordination. A study of this is important to technique standardization. For a phase of this interesting problem we will refer to the mechanism of transitional curves, A. O. A. JOURNAL, Nov., 1913, and Fig. 28, same periodical, Jan., 1914. (Technique articles.)

Figure three, we believe, is instructive. It clearly depicts the necessity of carefully diagnosing and isolating each individual lesion in order to specifically apply the indicated mechanics. To secure the most effective results the placement of the leverages must correspond to a plane parallel to the articulating surfaces; this will reduce effort, and prevent any possible damage in overcoming contractures and adhesions, and

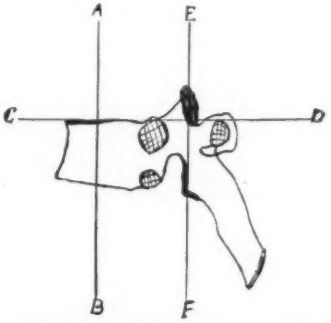


Fig. 5—An upper dorsal vertebra showing planes of rotation. AB, the axis through the body. CD, the plane parallel to the body and right angles to the axis. EF passes through the articulating facets and its axis is AB. (See dorsal figure in Fig. 4.) The superior and inferior articulating surfaces are simply part of a cylinder. In technique the desidered position is one that brings the planes parallel to both CD and EF respectively; although these planes are at right angles (approximately) still the rotary movement must be in harmony with both. No doubt in extreme movements the principle of the wedge is engaged.

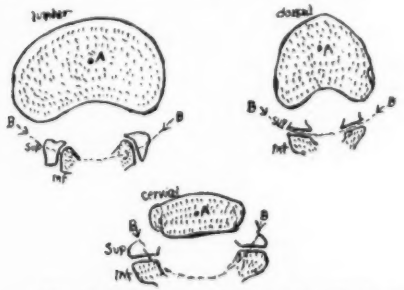


Fig. 4—"Schemes to show the effect of the shape of the articular processes on the movement of rotation between the bodies. 'A' is approximately the center round which rotation takes place; 'B' is part of the circumference of a circle drawn round 'A' and passing through the articular processes. It is clear that the shape and plane of these processes in the lumbar and cervical regions inhibit any rotation between the vertebral bodies." (Frazer's Anatomy of the Human Skeleton.) Lovett says, however, that one can forcibly rotate the lumbar vertebrae. We know this to be a fact clinically, although no doubt the rotation is not confined to one articulation but is gradated above and below. And very frequently the force of equilibration establishes a counter rotation above the primary lesion. Then very likely the rotation is made more apparent by either a unilateral or bilateral tipping of the articular processes.

shock to a minimum. Note how the angle of each articulation varies from all others. The axis of an individual vertebra is within the body of the vertebra. But if we attempt to adjust mechanically and not take cognizance of the individual axis we are very apt to fudge the issue for the axis of the spine as a whole is entirely separate (note AB) from that of the isolated vertebra.

In figure four, particularly the lumbar and cervical schemes, it would seem to the uninitiated that rotation in these regions is absolutely inhibited. Clinically, however, we know such is not the case. Forced rotation, no doubt causes some rotary movement, especially rotation-side-bending. And to the individual articulation (the one which receives the brunt of the force) is added a graduated effort to the joints above and below. A difference will be evident in the lesion when the spine is flexed and hyperextended at the time of lesioning. Both

of these vary from the lesion result when the spine is upright. Then there will be a difference depending upon which is primary, rotation or side-bending. Hence, the reason why in empirical technique in a certain instance one method will suffice while in another case a second method will be necessary.

In the dorsal outline, figure five, as in all regions, it seems to us that if we carry a definite picture in our minds as to the planes, angles and leverages of the same, and in the clinical lesion apply this knowledge, an approach to standardization will be made. This will give us tangible mechanical facts upon which to base our technique. If we have this knowledge then the method of technique is comparatviely unimportant; without it the procedure will be an inadvertent one. The lines of a joint are very exact, but exactness does not necessarily imply true parallels and angles in the mechanical sense, for the pull and counterpull of a large number of muscular groups that function at various angles in order to establish the several physiologic movements precludes it. But for practical purposes a study of parallels and angles is most instructive, and assists in getting at the mechanical rudiments of technique.

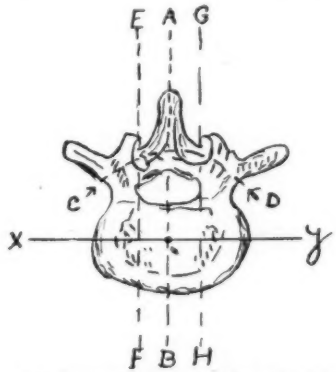


Fig. 6—A lumbar vertebra showing axis AB, and the confining articular processes against which rotation is greatly limited CD. The planes of the articulating surfaces EF and GH are parallel to the axis AB. The body should be so placed in technique that these points may be utilized. XY is the plane of the articulating surface of the vertebral body, which is at right angles to AB, EF, and GH. For practical purposes, this last point is very helpful, although technically from an exact mechanical viewpoint the law of the wedge insofar as the articulating processes are concerned may be the solution, the smaller the angle of the planes (wedge) the greater is the weight which can be overcome.

Figure six presents the similar scheme of mechanics as in figure five. It shows how technique efficiency should consider the planes of the intervertebral disc and the articular processes. We know that in physics *force* is anything which produces, or tends to produce, opposes, or changes motion in any manner. In the anchored lesion there is an inertia to be overcome; and *work*, the overcoming of resistance in producing or maintaining motion, is required; so we arrange a machine to attain the desired result. A knowledge of the fulcrum of the lever, its axis, is an essential. If the lines of leverage placement of the vertebral body articulation and the articular processes are not at right angles, or in rotary adjustment parallel, the nearer they can be so arranged the easier the adjustment, for the nearer they are so the smaller the angle of the wedge-plane.

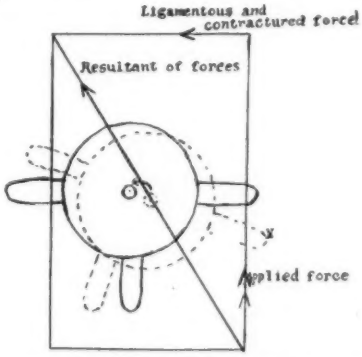


Fig. 7—Diagram of technique adjustment of a rotary lesion of upper dorsal. In connection with the ligamentous and contractured force we should recall that inertia is not only the inability of a body to start to move from a state of rest, but also to change the character of its motion when it is already in motion. The above figure illustrates the dynamo-mechanical method.

Figure seven is highly diagrammatic. It represents a rotary upper dorsal lesion. One favorite method of adjustment is with the patient sitting and hyperextend the spine until all muscular tension is neutralized. Then with the "heel" of the hand against the transverse process (dotted process x) a thrust is exerted. The other arm is

around the patient's chest. A little traction of the spine is helpful. This method has been described several times in technique reports. If skillfully performed it is very efficacious. It is an excellent illustration of the dynamo-mechanical method.

Figure eight is another highly diagrammatic illustration. It depicts the mechanics of a lower lumbar rotation. Placing the patient upon the side with thighs flexed at

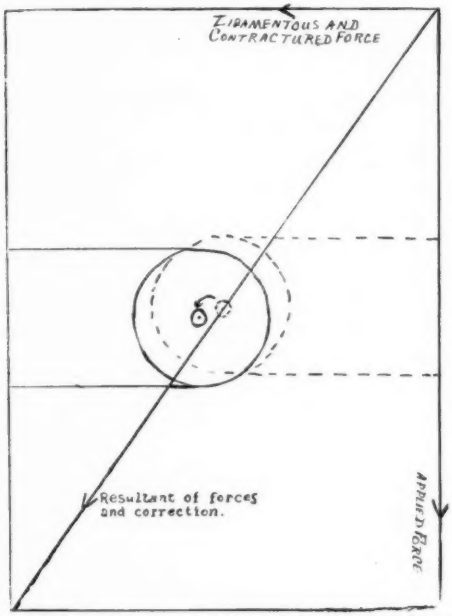


Fig. 8—Diagram of adjustment of lower lumbar rotation.

just the correct angle to bring the planes of articulation parallel or nearly so (a slight deviation from the correct angles will defeat adjustment). Then rotate the torso backward until all vertebrae above the lesion are locked; rotary force forward is applied to the crest of the upper ilium (the operator stands in front of patient). This method has also been described several times, but it is a fine example of specific technique. The same principles are employed in lumbar technique by placing the patient upon his knees with chest over a low stool while operator stands over him and adjusts. Success depends upon parallel planes of articulation.

In figure nine we present an interesting scheme of the adjustment by the physiologic method. The patient is seated on a

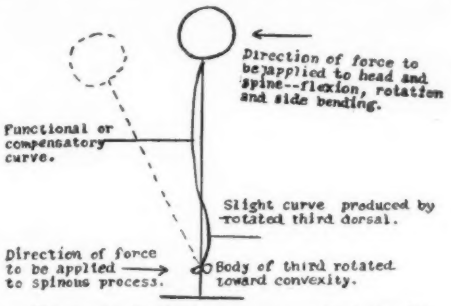

Direction of force to be applied to head and spine--flexion, rotation and side bending.
Functional or compensatory curve.
Slight curve produced by rotated third dorsal.
Direction of force to be applied to spinous process.
Body of third rotated toward convexity.

Fig. 9—An illustration of an excellent physiologic method to adjust a rotated third dorsal. This method clearly exhibits the physiologic movements of the dorsal region.

stool or low table. Stand directly back of the patient with the left hand thumb against the left side of the third spinous process, which is deflected or rather rotated to the left. The body of the vertebra is rotated, of course, to the right, the convexity of the curve. Place the right hand over the crown of the head with arm and elbow dropping down against side of neck and shoulder. Next flux the hand and upper spine, bringing fulcrum to bear upon the third dorsal; this gives one his range and application of levers and also loosens a little the contractions. Now, remembering we have a vertebra with side bending and consequent rotation of the body of the vertebra to the convexity, and carrying one or more of the vertebrae with it, a slight rotation of the head, including all of the upper vertebrae, will be the next step; this tends to reverse the direction of the rotated vertebrae by way of tension upon muscles and ligaments. With the patient thoroughly relaxed and the range of levers precisely measured and under complete control, exert a fairly sharp side bending with the hand and arm controlling the upper spine, *against* the adjusting thumb. Most of the work is done by the upper hand. It is needless to add that the power arm and fulcrum (fulcrum corresponds to the axis of rotation) must be correctly gauged and placed or else the execution will be a failure. It is a little reversed rotation that really does the work,

for if we attempt flexion and then side-bending, we simply exaggerate the lesion and nothing else. But here under these conditions rotation plus side-bending reverses and retraces to the normal apposition.

In contrast to this method one may utilize the dynamo-mechanical method by way of hyperextension in this lesion although it is rather high in the dorsal to do always effective work. That with the patient sitting upon table or stool and the spine hyperextended until muscular tension is neutralized, or better say the spinal muscular tension is released, then produce a little traction on this part of the spine in order to further release the anchorage. Now with complete control of patient and leverages carefully placed exert a thrust upon the posteriorly rotated transverse process.

The same method may be used with the patient flat upon their face on the table; place small pillow under upper chest. Have patient completely exhale, and at this precise moment exert a thrust downward upon the same transverse process.

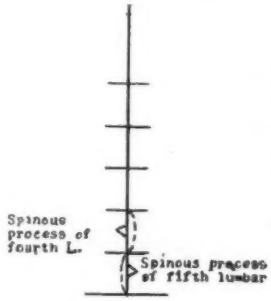


Fig. 10—Lesion between fifth lumbar and sacrum. The spinous process of 5L is to the right. The 4th lumbar is rotated in opposite direction—a compensatory lesion; this is established through equilibration.

Figure ten is a rough diagram of a lesion between the fifth lumbar and the sacrum with secondary change between fifth and fourth lumbars. For method of technique, we refer to paragraph describing figure eight. A more detailed description of these methods will be found in technique articles in A. O. A. Journal, Sept. and Nov., 1913, and Jan., 1914.

We have confined our examples chiefly to certain sections of the dorsal and lumbar regions. This contrasts some of the spinal movements and technical methods. This fragmentary talk sufficiently supports our theme, we believe, that a standardization of technique is feasible. At any rate a more thorough study of the mechanics will make each one of us more skillful. Both local and individual movements as well as general and common movements should be studied, the right angle, planes, the wedges, the side-bending and rotation, the unilateral tipping, the flexion, etc., are all expressions of either local or general movements. It is the mechanical expression of the lesion that we should note and guard with more than vestal vigilance. It is only a dullard or a god that cannot improve his technique.

Note.—Figures eleven to nineteen, respectively, are radiographs of a dog's spinal column. These are to illustrate the physiologic movements. The work was done at the Research Institute. I am under special obligations to Drs. Deason, Collins, Wendorf, Nicholson and Hollands.

The only qualifying factor missing is the anterior wall of the torso, but this does not invalidate the work. The animal was eviscerated. Everything else intact. The branch-like lines in upper dorsal region is bismuth injection of the dorsal arteries.

It will be readily seen there is a wide difference between flexion and hyperextension, rotation-side-bending, and side-bending-rotation. The effect is noticeable to articular facet, body of vertebra and spinal column en masse.

APPENDIX

The following is an abridgement from Lovett of the experimental conclusions on model, child and cadaver. These physiological movements apply to the normal spine:

(A) Flexion or Forward Bending

Flexion is a pure antero-posterior movement without perceptible rotation. It is the most evenly distributed of the spinal movements. Relaxed sitting position is one of flexion.

(B) Hyperextension or Backward Bending

Hyperextension is a pure antero-posterior movement of the spine without perceptible rotation. It is not an evenly distributed movement, but occurs almost wholly in the lumbar and lower two dorsal vertebrae. The dorsal region is slightly straightened.

(C) Lateral Flexion or Side Bending

This is not a pure movement. It is one part of a compound movement, of which twisting or rotation forms the other part. The character and distribution of the movement vary widely according to the degree of flexion or extension of the spine when the side bending is made. In other words, there is no one type of spinal side bending, as there are types of flexion and extension, but the character and distribution of the movements

are wholly dependent upon whether the spine is flexed, erect or hyperextended when the side bending is performed.

Side bending lying on the face shows a more evenly distributed lateral curve than does that in erect position. The curve is greatest in the upper lumbar and two lower dorsals. There is no perceptible rotation in slight side bending, but vertebral bodies turn to concave side in marked side bending.

Side bending in flexed position of spine is more evenly distributed in which the dorsal region participates more and the lumbar region less than in erect position. The greatest deviation occurs at about the eighth dorsal. Side bending occurs higher in the spine in flexion than in any other position, the lumbar region being comparatively locked against side bending by the flexed position. The more marked the flexed position, the higher in the spine is the side bending localized.

Rotation Accompanying Side Bending in Flexion. In the flexed position of the spine, side bending is accompanied by rotation of the vertebral bodies toward the *convexity* of the lateral curve. This rotation occurs chiefly in the dorsal region.

Side Bending in the Erect Position. Side bending in the erect position is largely a movement occurring in the neighborhood of and below the lumbar dorsal junction.

Rotation Accompanying Side Bending in the Erect Position. In this position side bending causes the rotation of the bodies of the vertebrae to the *concave* side of the lateral curve. This, however, occurs lower down in the spine than in the flexed position. The dorsal region participates less and the lumbar region more in the movement.

Side Bending in the Hyperextended Position of the Spine. Side bending becomes a sharply limited movement, localized low down in the spine and occurring almost wholly below the eleventh dorsal vertebra, becoming, therefore, essentially a lumbar movement. The dorsal region bends as a whole upon the lumbar and rocks over to the side practically unchanged, being locked against side bending by the hyperextended position.

Side bending, therefore, is situated highest in the flexed position, lower down in the erect position, and lowest in hyperextension.

Rotation Accompanying Side Bending in the Hyperextended Position. This is a sharply limited movement occurring in the lumbar region, including the twelfth dorsal as functionally a lumbar vertebra. The thorax rocks over to the side unchanged, and the rotation of the bodies is to the *concave* side of the lateral curve.

Rotation accompanying side bending is, therefore, of a different type in the flexed position of the spine from what it is in the erect or hyperextended position.

(D) Rotation

Rotation or twisting of the spine is to be considered as part of a compound movement of which side bending forms the other part. Under ordinary circumstances it is essentially a movement of the dorsal and cervical regions in which the lumbar vertebrae take but little part except in hyperextension and with the use of traction. The lumbar vertebral region possesses some power of rotation, as has been generally observed.

Rotation in the Erect Position. Rotation is freest in the erect position and is situated in the cervical and dorsal regions, reaching its maximum at the top of the cervical column and extending down the spine to the lower dorsal region, where it disappears. In forcible rotation the lumbar region rotates as low and including the fourth. The rotation in this position is accompanied by a side bend of the rotated region *away from the side* to which the bodies of the vertebrae turn. If the rotation is to the right, it is accompanied by a lateral bend *convex* to the left and vice versa.

Rotation in the Flexed Position. Rotation in the flexed position of the spine occurs in the cervical and upper dorsal spine, the lower dorsal and lumbar region seeming locked against rotating forces by the flexed position. The more extreme the flexion the more markedly is the rotation restricted to the cervical and upper dorsal spine.

Rotation in the Hyperextended Position. In hyperextended positions rotation with moderate manual force occurs as a twisting of the whole thorax on an axis in the dorso-lumbar region, the upper and mid-dorsal regions apparently being locked against rotation by hyperextension. The site of rotating movement in this position is, therefore, in the one or two vertebrae above and the one or two vertebrae below the dorso-lumbar junction. Rotation, therefore, is located high in flexed positions, lower in erect positions, and is situated lowest and is more sharply localized, in hyperextended positions.

Side Bends Accompanying Rotation. A lateral deviation of the spine accompanies all rotations. It is situated at the site of the rotation and is *convex* to the right when the rotation is to the left and vice versa. In the erect position rotation causes a marked side curve in the dorsal region.

(E) Cervical Region

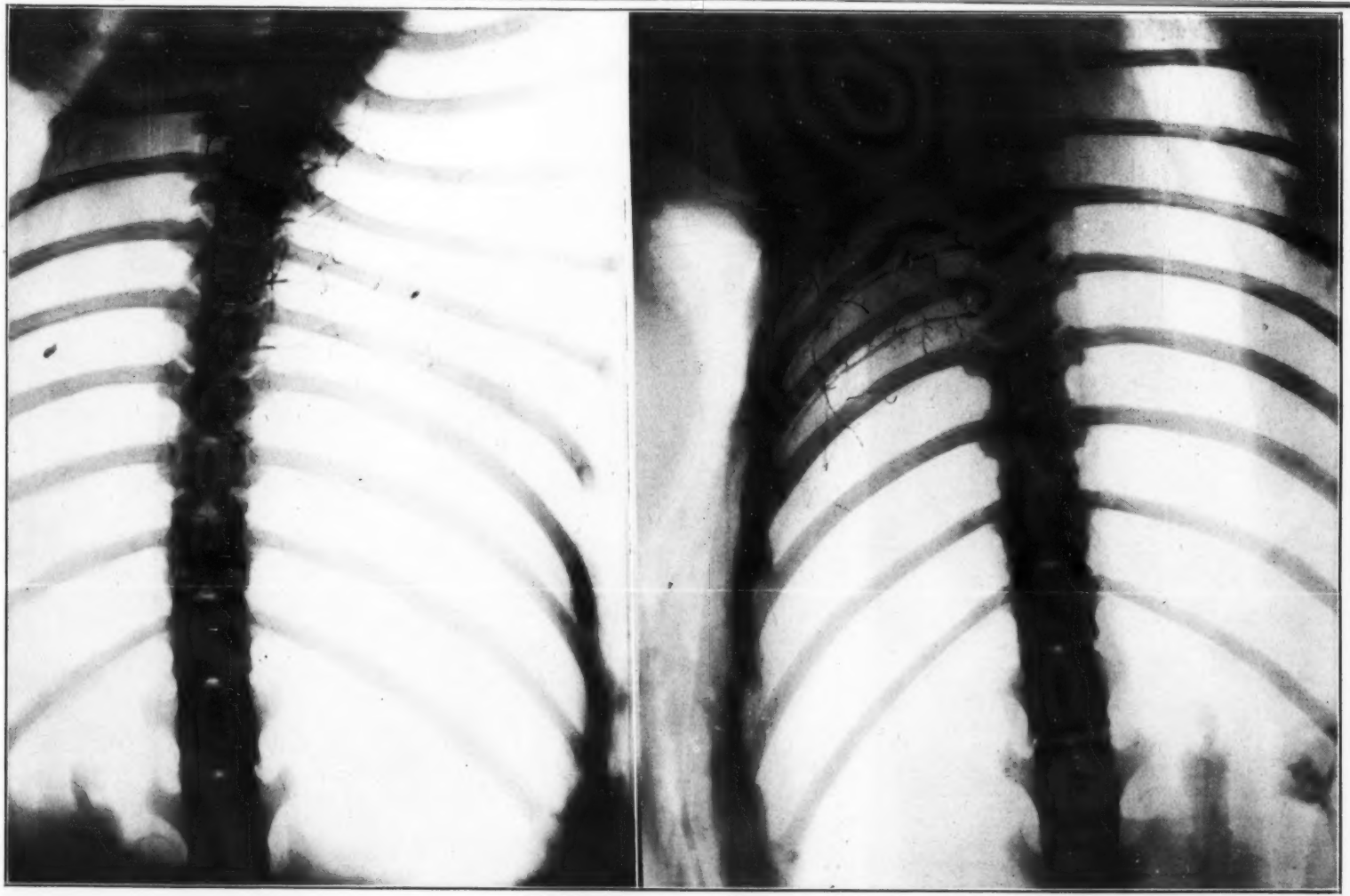
Side bending is accompanied by rotation of the bodies of the vertebrae to the *concavity* of the lateral curve, as in the lumbar region.

Rotation is accompanied by a side bend *convex* to the side opposite to which the bodies of the vertebrae turn; that is, in a right rotation the curve is *convex* to the left.

(F) Dorsal Region

Side bending is always accompanied by rotation of the bodies of the vertebrae to the *convex* side of the lateral curve.

Rotation is accompanied always by side bending, the lateral curve being *convex* to the side away from which the bodies of the vertebrae turn. In a rotation of the top of the column to



(Fine net work, bismuth injected veins.)

FIG. XI.—Flexion and Rotation—side-bending of Dorsal spine. Rotation of lumbar spine.

FIG. XII.—Flexion and Side-bending—rotation of Dorsal spine. side-bending of lumbar spine.

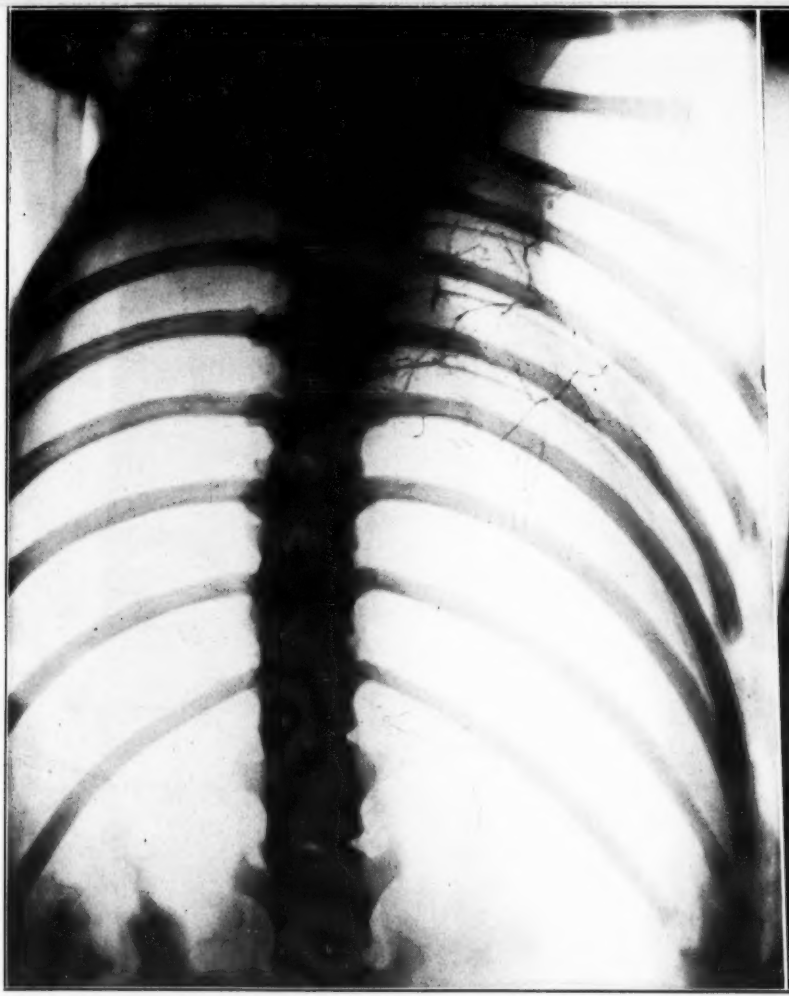


FIG. XIII.—Hyperextension and rotation side-bending of Dorsal spine.

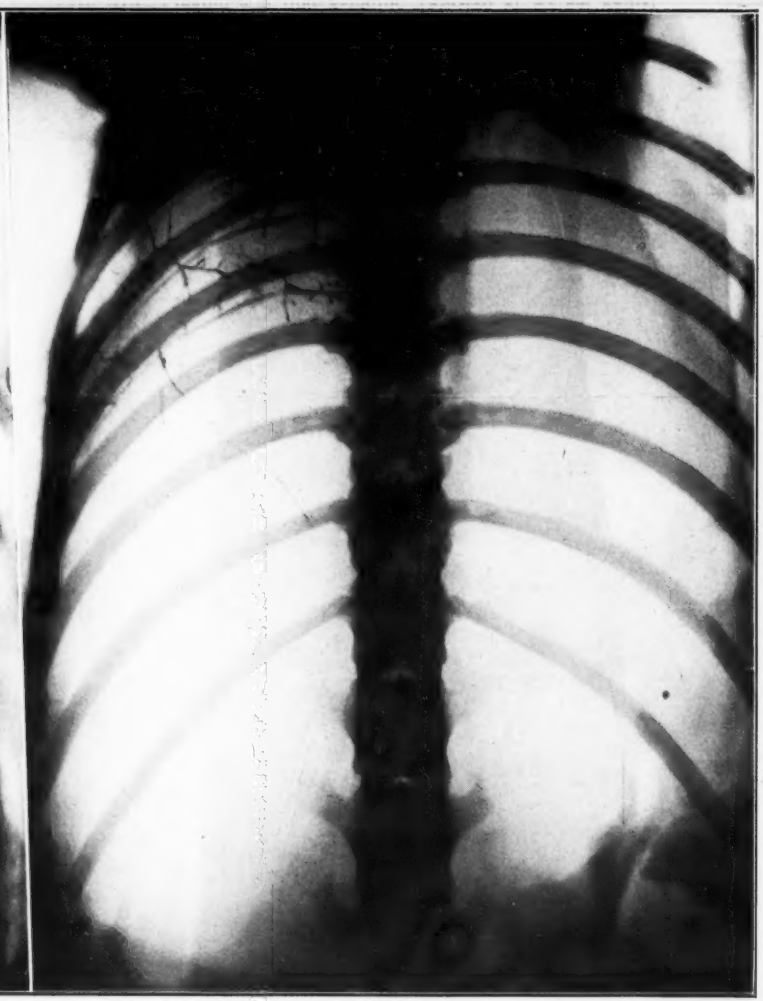


FIG. XIV.—Hyperextension and Side-bending—rotation of Dorsal spine.

FIG. XIII.—Hyperextension and rotation side-bending of Dorsal spine.

FIG. XIV.—Hyperextension and Side-bending—rotation of Dorsal spine.

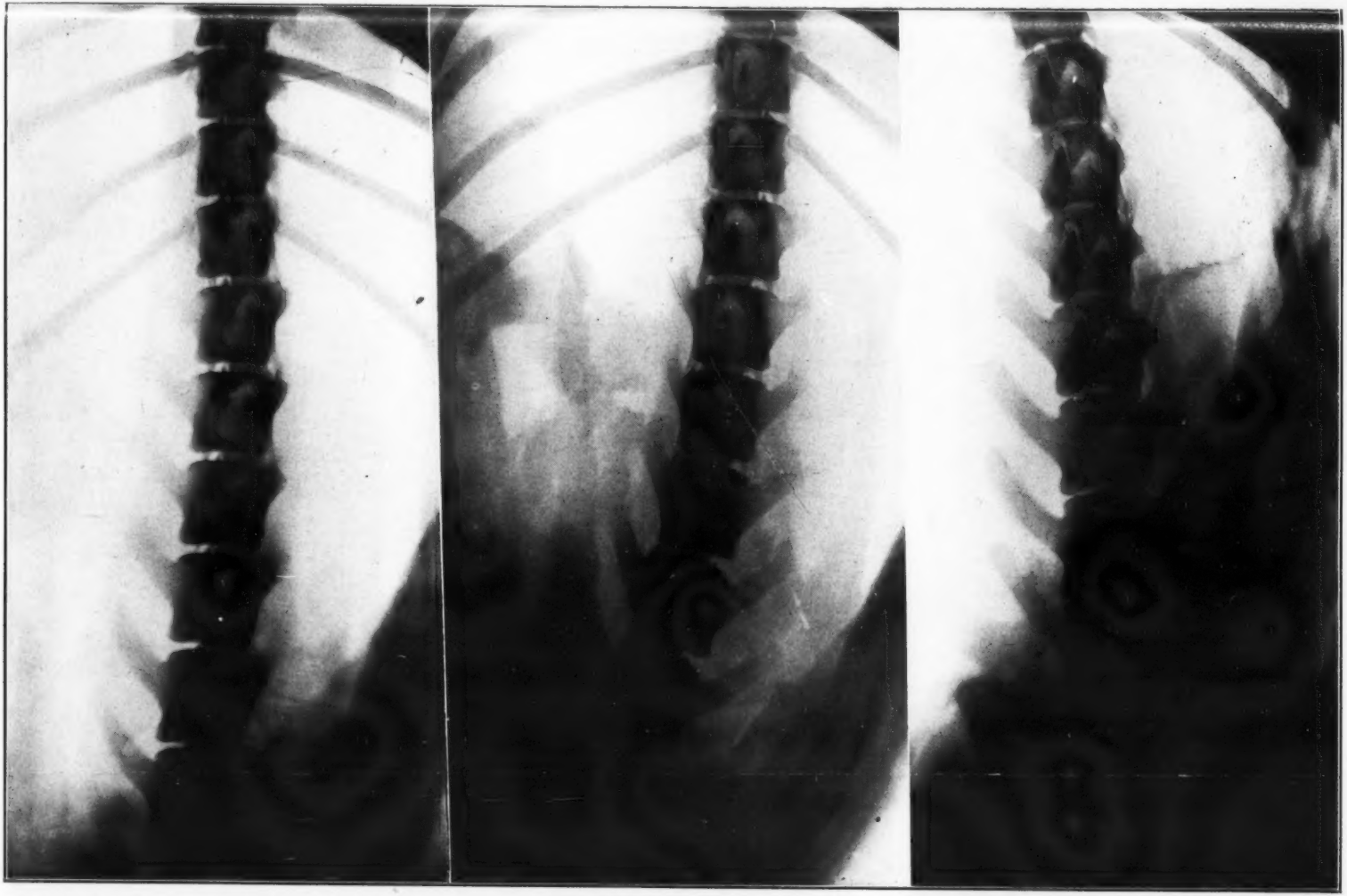


FIG. XV.—Flexion and Rotation—side-bending of lumbar spine.

FIG. XVI.—Flexion and side-bending—rotation of lumbar spine.

FIG. XVII.—Hyperextension and rotation—side-bending of lumbar spine.

FIG. XVIII.—Straight spine with side-bending—rotation of lumbar spine.

FIG. XIX.—Hyperextension and side-bending—rotation of lumbar spine.

the left the lateral curve is to the right and vice versa.

(G) Lumbar Region

Rotation accompanying side bending in the lumbar spine is always with the bodies turning to the *concavity* of the lateral curve; which is to be contrasted with the opposite rotation occurring in side bending in the dorsal region.

(H) Certain Conclusions of Movements of the three regions of the Spine

In the lumbar region flexion diminishes mobility in the direction of side bending and rotation, and extreme flexion seems to lock the lumbar spine against these movements.

In the dorsal region hyperextension diminishes mobility in the direction of side bending and rotation.

In the flexion of the whole spine bending is accompanied by rotation of the vertebral bodies to the *convexity* of the lateral curve, the characteristic of the dorsal region.

In the erect position and in hyperextension of the whole spine side bending is accompanied by rotation of the vertebral bodies to the *concavity* of the lateral curve, the characteristic of the lumbar region.

Rotation in the dorsal region is accompanied by a lateral curve, the *convexity* of which is opposite to the side to which the bodies of the vertebrae rotate.

(I) Reasons for Torsion

It is obvious from these experiments that there must be some fundamental reason for the constant occurrence of one type of torsion for side bendings in flexion and the occurrence of another type in extension, as well as for the constant association of torsion with side bending. The vertebral column is a flexible rod capable of bearing great weight. It is not equally flexible in all directions, but it is, of course, capable of some movement in all places, and, as such, should come under the control of the laws governing flexible rods in general. The extent of any of the movements of the spine is, of course, greatly influenced by the shape of the vertebral bodies, the curves of the spine, the character of the articular processes (experiments seem to show that the articular processes merely serve to accentuate the same rotation that would be present if the column of the vertebral bodies were by itself), the resistance of the ligaments, and the relative strength of the muscles.

From the mechanical point of view, torsion results from any motion of a straight flexible rod in which all the particles do not move in parallel planes. Consequently, if such a rod is bent in two planes at the same time, torsion must inevitably occur. The vertebral column is not a straight flexible rod, but one bent in physiological curves in the antero-posterior plane; side bending must, therefore, inevitably lead to torsion, because it means bending in two planes. Nor does the fact that the invertebral discs permit motion in all directions affect the question, because from a mechanical point of view the vertebral column behaves in general as it would if it were a homogenous flexible rod.

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FIG. XVIII.—Straight spine with side-bending—rotation of lumbar spine.

FIG. XIX.—Hyperextension and side-bending—rotation of lumbar spine.

PATHOLOGY OF LESIONS AND PRINCIPLES OF CORRECTION

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Definitions and Terms

THE osteopathic lesion has been defined as any structural perversion which causes or maintains functional disorder. This may occur anywhere in any tissue. The bony lesion is an osteopathic lesion in which there is a perversion of function of a joint—or a group of joints. There may be or may not be mal-alignment of the bones composing the joint. There may be too much or too little movement in the joint.

Fixation—complete or partial—of a joint in any position which it may assume normally, even in perfect alignment, constitutes a lesion. This is the most common type of lesion. The subluxation or partial dislocation, produced only by mechanical violence, and the relaxed joints are other types of lesions.

The essential condition in the osteopathic lesion is a perversion of function in the joint, producing a perversion of function in the tissues around the joint and in more remote tissues reflexly. Whether there is too much or too little movement, whether the bones are in normal position or not, correction consists in the restoration of function to the joint. When the bones involved have undergone marked pathological or adaptive changes of shape, re-alignment is impossible. The most that can be hoped for here is the attainment of a fair degree of motion—even this is sometimes impracticable.

Pathology of Lesions with Restricted Motion

Considering briefly the pathology here we have simply a slight inflammation, acute or chronic:

Acute Lesions—These are marked by

First article of this series published in Journal for May.

hyperemia, exudation, infiltration, cell disintegration (slight cell proliferation), accompanied by swelling, soreness, heat, muscular contraction, ligamentous thickening with marked irritation of nerve terminals in and about the joint.

Chronic Lesions—These are characterized by less hyperemia than in the acute, less exudation, less cell disintegration with more cell proliferation. There is less swelling, soreness, heat, muscular contraction, and nerve irritation; while the ligamentous thickening and muscular induration are more pronounced.

The two present different problems in treatment as do any other two acute and chronic inflammations.

Treatment of Acute Lesions

With the acute lesion any considerable manipulation is worse than useless, as it increases the tissue destruction and irritation, delays healing, and thus defeats its own end. Gentle manipulation, more especially of the tissues around the joint, with the aim of increasing the circulation, is usually all that is advisable.

If the bone is subluxated to such an extent that it is reflexly perpetuating and even increasing the irritation, a well directed effort toward reduction is indicated—"fix it and leave it alone." However, if the bone is in a position it may assume normally—and most of them are—the best thing to do is to "leave it alone," until the acuteness of the inflammation has subsided.

In most acute lesions the bone is held out of alignment by muscles unequally contracted from overstimulation. Attempts at re-alignment at this time stimulate the involved muscles to more vigorous contraction and the condition is rendered worse.

Research shows that it is the perversion of function of a joint that produces disorder—not pressure on spinal nerve trunks due to mal-position of bones. Then in this acute lesion there is no reason to suppose that, with the same amount of pathology in and about the joint, there would be more reflex irritation if the bone were held in slight rotation than with the bone in perfect alignment. The only difference between an acute lesion in alignment and one which is not in alignment is an unequal contraction of muscles in the latter. The only way in which this is more injurious than the other is in the disturbance of the equilibrum of the body.

In the acute lesion we have primarily a pathological condition to treat—not a mechanical one. Instead of making matters worse by attempting an adjustment, so-called, we should treat the acute inflammation first and then restore function to the joint. Inflammation is nature's reaction to injury, and, in the treatment of this as in any acute inflammation, we should endeavor to aid nature according to the following principles:

(1) *Rest*—Motion tends to increase tissue destruction and to cause adhesions of synovial membranes;

(2) *Good circulation* secures a more adequate reaction and a more efficient removal of waste;

(3) *Good nerve supply*—Insuring proper regulation of the reconstructive processes;

(4) *Sufficient time*—Nature requires time to do her work. We should recognize this and not try to hurry her unduly;

(5) *Removal of cause*—If the cause is still acting it should be removed or counteracted if possible; but in a great many acute lesions it will have ceased when treatment is inaugurated.

Rest in bed or rest afforded by a support should be given. Good circulation should be secured through hydrotherapeutic or other measures utilizing the principle of heat. Alternately drawing blood to the part by hot applications and driving it out by cold is effective in this. Or gentle manipulation of the tissues about the joint may be used. The quality of the blood should receive attention. Good nerve supply will be facilitated by the correction of any remote lesions, if possible without injury to the part involved, and by a general building-up process. The result of the healing of this acute lesion will probably be a certain amount of stiffening in and about the joint due to fibrous infiltration chiefly. Now we are confronted with the necessity of restor-

ing function—or full motion—to the joint. This is our mechanical problem.

Treatment of Chronic Lesions with Restricted Motion

In the chronic lesion with restricted movement there is usually poor circulation with passive congestion or anemia, in contra-distinction from the acute, with less tenderness than in the acute. The irritation due to manipulation in this case is a positive therapeutic agent stimulating circulation, and, with the help of this increased blood flow, disintegrating and carrying away of excessive tissue in and about the joint. Too violent manipulation, however, may increase the reaction too much, producing an acute condition. It is our everlasting problem to so gauge our treatment that the patient may receive greatest benefit with the least injury.

Taking into consideration the pathology in the treatment of these lesions our procedure would be as follows. (Keep in mind always that the object is to restore function to the joint, not simply to bring it into alignment.)

(1) Loosen joint—breaking adhesions if present. Any effective measure may be used;

(2) Smooth off by motion articular surfaces roughened from disuse;

(3) Lengthen shortened ligaments by stretching, active and passive—by exercise and manipulation;

(4) Relax contracted muscles by stretching and direct manipulation;

(5) Tone up and develop weak muscles by exercise.

For the accomplishment of these things it is necessary to know well the anatomy and movements of the joints and the muscular attachments.

Methods of Loosening a Joint—Force may be applied suddenly or more gradually. Some osteopaths maintain that the sudden application of force is dangerous and harmful; but, if applied intelligently, there is no reason why it should be. Personally I believe that the quick, pointed application of force is the most effective method of loosening a joint, and if done accurately and carefully it has the additional advantage of avoiding the bruising of soft tissues.

The different methods are: (a) Separation of the joint surfaces—by applying a lifting force on the upper bones at right angles to the articular facets, as, for instance, with the cervical spine bent to the left, rotating it to the right, thus separating the joints on the right. A too violent application of this measure is dangerous, although a moderate use of it should not be; (b) Exaggeration of the mal-alignment. This is probably no more effective than the opposite movement and depends upon the same principle. For actual subluxation, however, this is perhaps the most effective method of loosening the joint; (c) Direct reduction of the mal-alignment. This is the exact opposite of the one preceding. Both depend upon moving the articular facets in directions parallel to their surfaces; (d) If there is no mal-alignment present, the joint may be loosened by moving the opposing articular surfaces in different directions parallel to each other. This is the best method in most cases. (Of course this is what takes place in the normal joint movements—flexion, extension, rotation, or sidebending.)

After the joint is loosened by any or all of these means, the other measures aforementioned should be used to restore function to the joint. In lesions with rotation or sidebending to the right, the shortened ligaments and most of the contracted muscles are on the right side. Forced and prolonged rotation or sidebening to the left, whether performed by the patient himself, or by the physician, tends to overcome the shortening and contraction on the right.

Energetic voluntary rotation or bending to the left will strengthen the relaxed and lengthened muscles on the left. This motion will also tend to wear the joint surfaces smooth. It should be supplemented by a certain amount of movement in all directions, thereby producing a strong and stable condition of the joint.

Methods of Applying Force in Correction of Lesion—(a) Direct—with the hand on the bone itself; (b) Indirect—using the rest of the spine or some part as a handle; (c) Or a combination of the two—for instance, exerting pressure with the thumb of one hand on the spinous process, and with the other, rotating the trunk.

The direct sudden application of force may be effective in loosening the joint; but after this motion and exercise are necessary. Thus it will be seen that this "chiropractic adjustment" is only a partial measure in the treatment of chronic lesions.

Indirect application of force to any vertebra through another part of the spine depends upon the immobilization of that part. This is accomplished in different ways:

For instance, if we desire to use the upper dorsal to apply a rotation force to the lower dorsal, we may immobilize it by rotating it to its limit—until all its check ligaments are taut—when it becomes rigid: then further rotation movement must come in the lower dorsal.

Another method is to produce an extension in the dorsal down to the bone in lesion. This locks it, as explained in a previous article, by bony opposition. The bone in lesion will not extend because *it is in lesion*. Then a rotation or sidebend specifically applied will tend to produce movement here. We have used the dorsal down to the lesion as a handle with which to apply our force where we want it.

This treatment has been called dangerous and harmful by some; but when applied with proper regard for the feelings and condition of the patient, there is no reason to suppose it more harmful than other movements depending on the same principle of fixation. Judgment is required in all things.

This treatment is, as are many others, rendered more effective by a combination of the direct method with it, that is, with one hand on the bone itself. This hand not only helps to move the bone in the desired direction but it holds the patient stable by applying counter-force.

In giving any manipulation with the purpose of moving a vertebra, it is of course essential to have the muscles as much relaxed as possible. Now if the part of the spine we wish to use for leverage is moved to its limit and held there under strain, the muscles will involuntarily contract; if carried to the limit and held easily, or moved a little, relaxation is easier. The corrective movement can be started in this position as the limit is very quickly reached, the force then being applied to the desired part.

Treatment of Hypermobile Lesions

A single joint may be involved or a section of the spine due to the development of compensation for lack of movement in some other part. This condition is, however, likely to be a general one due to lack of tone of all the tissues, especially the muscles. It is the function of muscles to hold the joints firm and stable by their normal tonicity; it is the function of ligaments to prevent dislocation. Since they are composed of connective tissue their length is practically fixed, only being changed by the prolonged activity. From this it will be seen that the problem is largely muscular, and that specific exercises as well as a general building-up process are indicated. Of course loose joints are continually subject to subluxations but it is unavailing to keep on reducing these without correcting the fundamental cause.

An appliance worn continuously will cause the muscles to atrophy, thus working in direct opposition to the primary object of treatment. It may also cause the joint to stiffen from disuse. This is not what is wanted since the aim in treatment of any lesion is to restore normal function to the joint. An appliance may be worn during exertion to protect the joint from the devitalizing effect of fatigue or strain. It should be removed when this necessity is not present and exercises taken to restore tone and strength. Where all the spinal joints are too loose a general course of physical culture should be prescribed.

43 Church St.

IRRIGATION VERSUS ANTISEPSIS IN TREATMENT OF CATARRHAL AFFECTIONS OF NOSE AND THROAT

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SINCE the time of the introduction of antisepsis by Lister, much experimental work has been done for the purpose of developing a safe and effective method of freeing body tissues from bacteria. The fact that it is impossible to use a substance of sufficient bactericidal power to destroy bacteria without doing great harm to the body parts upon which it is used has ever been a great barrier to success. Surgeons have abandoned the idea of antisepsis except in rare instances in which it is advisable to destroy or arrest the progress of bacterial invasion at the sacrifice of the destruction of body tissue. Asepsis or cleanliness as far as is possible, without injuring tissue, is always preferable.

Given normal blood and lymphatic supply and drainage and normal nerve force, all tissues possess a high degree of resistance to bacterial invasion. Normal body fluids have bactericidal properties and they also contain substances which have the power of neutralizing bacterial toxins. It is, therefore, safest to retain the normal functions of tissues and to avoid the inhibition of their secretions.

There is nothing new in any of the above statements. They are old and well established principles which all physicians should know, and yet so few actually use it in practice. Specialists in diseases of the intestinal tract are abandoning internal antisepsis and specialists in diseases of the nose and throat are just beginning to realize that strong antiseptics are valueless.

We are told to keep the nares and rhinopharynx washed out or sprayed with mild, unirritating alkaline fluids, to which may be added sufficient phenol (carbolic acid), menthol or essential oil to give a smell suggesting "medicated." In my belief these sprays wash out only a small percentage of germs, and do not make it sufficiently disagreeable to others to cause them to move out. E. L. Jones, M. D., the *Journal of the A. M. A.*, Jan. 9th, 1915, Wales, in the *Annals of Otology, Rhinology and Laryngology*, Sept., 1914, states: "All solutions applied to the nasal mucosa should be so mild that they could be dropped into the eye."

For the purpose of determining the possible value of the so-called antiseptics used for nose and throat washes, I recently conducted a series of experiments by adding the solutions to be tested in percentages varying from ten to one hundred per cent. to measured amounts of sputum for from 30 minutes to three hours. The fluids were kept agitated with the sputum in sterile breakers, protected from extraneous bacteria by covers and after various lengths of time, small amounts of the sputum were transferred to culture plates and incubated to determine whether the bacteria had been killed. Evidently, it is necessary for the fluid to disintegrate the sputum before it could exert any bactericidal power.

The following so-called antiseptics were tested for their disintegrating and bactericidal powers: Alcohol, glycerin, Dobell's solution, peroxide of hydrogen, various volatile oil mixtures and mixtures of a few coal tar preparations. Eight of the most commonly advertised proprietary preparations were tested in the same way. Several formulae were submitted since the announcement of this work, and these were also tested. Various combinations of salts, alkaline, neutral and acid in reaction and of various strengths were also tested. Of these peroxide of hydrogen, and two or three of the proprietaries seem to be somewhat effective in disintegrating sputum and they also have slight antiseptic properties, but we question whether they can be used in sufficient strength to be effective and yet non-injurious to the tissues.

The tests showed that none of these preparations would kill the pathogenic bacteria common to the nose and throat, even when mixed with the sputum for one hour, —unless used in strengths many times beyond that which could be borne by the mucous membranes without injury. I am, therefore, convinced that there is no such thing as a practical antiseptic for use in the nose and throat.

Practically, the chief objection seems to be that antiseptics do not actually remove

foreign material from the nose or throat and even if they were actually bactericidal, they would fail to accomplish the main purpose, that of cleansing.

Irrigation

It seems logical that the pharynx and nasal cavities might be cleansed just as surgeons cleanse other body parts, viz., by thorough washing. Sterile water in large quantities, is irritative to mucous membranes, therefore, it is best to add some neutral or alkaline salt.

For the purpose of determining a method of cleansing the pharynx, mouth and nasal cavities without irritation to the mucous membranes, we have experimented with a number of alkaline, neutral and acid salt solutions of various percentages. Solutions of various strengths and various combinations of sodium chloride, sodium carbonate and bicarbonate, sodium salicylate, sodium biborate, sodium bitartrate, sodium acetate, sodium benzoate, salicylic acid, calcium chloride, potassium chlorate, and other salts were tested for the purpose of finding a combination that would cleanse and yet not irritate the mucous membranes. From the results of our work it was found that the cleansing power of sodium chloride can be increased by combining it with other salts and that it can in this way also be made less distasteful to the patient. It has been found most practical to prepare a concentrated solution, and add sufficient of this fluid to a quantity of sterile water to make a solution of from one to three per cent. strength, as the condition may require.

Formula No. 44.

Sodium chloride	18%
Calcium chloride	18%
Volatile oils, peppermint, cinnamon and wintergreen as desired.	

Formula No. 59.

Sodium chloride	16%
Calcium chloride	16%
Sodium bitartrate	5%
Sodium acetate	2%
Volatile oils, peppermint, cinnamon and wintergreen as desired.	

Formula No. 61.

Sodium chloride	18%
Sodium bicarbonate	14%
Sodium biborate	5%
Sodium bitartrate	3%
Volatile oils, peppermint, cinnamon and wintergreen as desired.	

It has been found best to prepare a gallon of the solution at a time and keep ready for use. The salts are to be dissolved in warm or boiling water until solution has been effected. It should then be allowed to stand until cold before filtering as some of the salt is likely to precipitate upon cooling. The volatile oils, if they are desired, are to be added and thoroughly mixed with the solution before filtering. It is almost as convenient to have the salts mixed and kept in a box or wide mouthed bottle and use one teaspoonful or more to the quart of water. Any pharmacist can prepare these solutions or the salt mixture, or the doctor can purchase the proper amounts of the salts and prepare them. A funnel and filter paper are the only things needed.

Each of these formulae has certain advantages. Formula No. 44 seems to be most effective in cases in which there is a great excess of mucus. It is also slightly astringent and can be used effectively after digital operations. It has the disadvantage of being distasteful to some patients and I believe that because of its astringency, it should not be used too often or too long. Formula No. 59 has an advantage in that it is also astringent and not so distasteful to some patients, but it does not dissolve mucus as well as either of the others. Formula No. 61 has the advantage of being less distasteful to most patients, it dissolves mucus, and is a good general cleanser and is not irritative even when used in solutions of higher concentration.

Twenty-five to thirty c.c. of either of these fluids (practically one ounce) when added to one liter (one quart) of sterile water, will make about a one per cent. solution and this is best for most cases. Where there is much mucus or other foreign matter to be removed, two or three or even four ounces of the fluid may be added to a liter of sterile water and used for irrigation, but it is not desirable to use the stronger solutions frequently or for a long period of time, as they are somewhat irritating.

It is best to lubricate the nasal cavities after such irrigation to protect the mucous membranes from dust, cold, air, etc. For this purpose I use chondrus jelly and apply

it by means of a cotton applicator or as a spray. I prefer this to oils because it is water soluable and is removed as soon as the normal secretions are well established. It does not remain in the nostrils to serve as a dust collector, as the various oily preparations previously used for such purposes do.

Formula.*

Chondrus jelly	1 liter
Glycerin	100 c. c.
Alcohol	60 c. c.
Thymol or menthol	2 gms.
Volatile oils	q. s.

Method of Irrigation—For irrigation of the throat, a liter container is filled with sterile water to which one ounce of the fluid (formulae Nos. 44, 59 or 61) is added. The water should be about body temperature. The container is elevated two or three feet above the patient's head. The tube contains a pressure bulb by means of which the pressure may be increased as desired. The post-palatal irrigating tube of metal is inserted through the mouth and turned up behind the soft palate. The patient's head is inclined forward over the fountain cuspidor and the fluid allowed to flow. If it does not flow freely forward through the nostrils, the bulb is grasped and pressed until the desired flow is obtained. About half of the liter of fluid is forced through the pharynx in this way and then the mouth is cleansed. The post-palatal tube is then replaced by a nasal tip which is placed in one nasal opening,—the patient's head is again inclined forward and he is asked to breathe through the mouth. The flow is again started which passes around the septum and out the other nostril. The tip is then changed to the other nostril and the irrigation repeated. One quart of fluid is thus forced through the pharynx and nasal cavities, which is in most cases sufficient to thoroughly cleanse the parts. This fluid is not antiseptic nor is it irritative, but it does thoroughly cleanse the entire naso-pharyngeal tract.

*Directions.—Boil sufficient chondrus slowly until when strained through linen will make one liter of thick jelly. Dissolve the thymol in the alcohol and add thirty or forty drops of a mixture of oils—peppermint, cinnamon and wintergreen. Now add the glycerin to the alcohol mixture and mix with the chondrus jelly while cooling.

Precautions—The operator must be careful in inserting and removing the post-palatal tube, because otherwise it is very disagreeable to the patient. The solution must not be too concentrated or some irritation to the tissue may be caused. Too much pressure must not be used, as this may force the fluid into the sinuses. There is no great danger from sinus infection, even if the fluid does enter them, because a free drainage is established. It is best not to exert any pressure on the bulb during the anterior nasal irrigation. No harmful effects will result if the patient swallows some of the fluid, but it is not best to do so, as it contains much mucus and other wastes.

It is well, I believe, not to continue the irrigation for a longer period than is necessary to thoroughly cleanse the parts and allow them to become normal, but I have never had any bad results in those cases in which irrigation was continued for a long time.

Irrigation as an Aid in Treatment of Catarrh

It must be understood that I am not placing irrigation first in the treatment of catarrh or any other affection of the nose and throat. It is only a part of the treatment and an aid to the more specific osteopathic work, but I am sure that it is very helpful in most cases.

By irrigation, the tissues may be freed from accumulated secretions and their normal secretions re-established. In many cases, crypts or folds of the mucous membrane of the nasal cavities and pharynx are filled with mucus or collected foreign matter which has become more or less solid. This, by bacterial disintegration, maintains a constant irritation and furnishes a nidus for infection and pus formation. Such conditions can frequently be seen by means of the pharyngoscope and nasopharyngoscope and they can sometimes be detected by the palpating finger. These retention pockets may be formed over the openings of sinuses, thus obstructing the drainage. Dr. Edwards has told me of a case in which the nasal ducts were so occluded that a severe conjunctivitis resulted, and I have seen many cases in

which similar occlusions were the cause of sinuitis.

Method of Treatment—If the above theory of naso-pharyngeal irritation is right, the treatment would consist of three essentials: First, the removal of the foreign substance by irrigation; second, the removal of the retention pockets by digital technique, and third, the correction of any structural lesions, interosseous, ligamentous or muscular, which may interfere with the nutrition or drainage of the affected parts.

The following method of treatment for catarrh, sinuitis and hay fever has been used for the past four months with favorable results: A careful inspection of the nasal cavities, mouth and lower pharynx is made by means of the head mirror, nasal speculum, tongue depresser and pharyngoscope. The naso-pharyngoscope or diagnostic mirror, or both, are used for inspecting the epipharynx.

Irrigation with the saline solution, one pint through the pharynx forcing the fluid forward through the nares by means of the post-palatal tube is done first. The lower pharynx and mouth are also thoroughly cleansed in this way. The nares are then thoroughly irrigated as described above. The inspection methods mentioned above are again applied to determine to what extent the cleansing has been effective. A digital examination of the pharynx is then made and if any retention pockets or adhesions are found they are cleared away.

Digital dilation of retention pockets of the nares can also be done if the physician's finger is sufficiently small and the nasal opening sufficiently large, but I do not approve of forcing the finger through the nose when to do so would cause great pain or much trauma. The mucous folds in the nares can be reduced by the use of a long nasal forceps containing a pledget of cotton or a cotton applicator. By beginning with a small pledget of cotton dipped in chondrus jelly and passing it back through the nasal cavities into the pharyngeal opening and gradually increasing the size of the cotton pledgets, the nasal cavities can be well dilated and freed from foreign matter.

The nose and throat are again irrigated to remove any material which may have been dislodged by the digital treatment and the nasal cavities are lubricated with chondrus jelly to prevent irritation. The adjustment of interosseous, ligamentous and muscular lesions is, of course, given first place in order of importance.

By a comparison of my case reports before and since using the irrigation method I find that in all catarrhal affections of the nose and throat, the results are much better from its use. This is especially true in sinuitis, hay fever and impaired nasal respiration.

GODDARD BLDG.

DIARRHEA AND CHOLERA INFANTUM

CONSIDERATION OF OSTEOPATHIC TREATMENT IN ALL PHASES

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DIARRHEA, like dyspepsia and constipation, represents only a symptom or result of various disorders. "The term 'diarrhea' is used to include all conditions attended by frequent loose evacuations of the bowels. These depend upon an increase in peristalsis and an increase in intestinal secretions."—Holt. Although there are many types, there is much in a general way to be considered in the study of diarrhea, or gastro-enteric conditions.

Etiology

As a predisposing factor age seems to play a most important role, these conditions occurring more frequently in the first year of life, especially during the second summer, among bottle fed babies, although children of all ages are susceptible. The mortality in children under two years of age suffering with diarrheal conditions is greater than the deaths of children of all ages suffering from the five infectious diseases, measles, scarlet fever, mumps, typhoid fever and diphtheria, in a given time.

The mucous membrane of the infant gastro-intestinal tract is very delicate and is severely taxed to meet the daily needs of growth and quickly becomes inflamed when unfavorable conditions arise. Children are

especially susceptible to environment and many succumb to unclean, congested surroundings, unclean milk receptacles, nipples and nursing bottles, allowing the rapid proliferation of bacteria. Impure air breathed seems to be a predisposing causative factor. Dr. Still says the poisonous gases received by the lungs and distributed to the abdominal viscera have a poisonous effect. There is failure in the perfection of arterial blood and arterial blood below the average is always followed by a failure in the abdominal viscera to retain their normal condition and contents. Environment is probably one of the most important causative factors among the poor and in tenement districts, and yet uncleanliness is encountered among those in better circumstances.

The season of the year has great relation to these cases. They begin in May, increasing in number and severity until the maximum is reached in July, when they gradually decrease through August and September.

Under the heading of improper food, might be mentioned, the ingestion of food not suitable to infant digestion, unripe or over ripe fruit, decomposed or fermented milk with its favorable media for bacterial growth, impure ice cream and ice cream cones (and here allow me to emphasize the ice cream cone with its chemicals and poisonous coloring matter, as a great menace to little children).

Anything which reduces the vitality of the child increases the liability to diarrheal conditions, nervous shocks, irritability in both babe and mother, disorders of digestion or malnutrition and rickets, dentition and sudden changes in atmospheric temperature, which tax the radiating power of the surface of the body and the child loses heat more rapidly and has little resistance to violent changes.

Lastly and most important among the causes is the osteopathic lesion, either chronic, as a predisposing factor, or acute, as an exciting cause. That the spinal lesion can cause diarrhea is a fact which Dr. Deason of the Research Institute has established beyond question by his experiments. That is the spinal lesion in the splanchnic region affecting the normal inhibitory function of the splanchnic nerves, or lesions affecting the vagus resulting in increase peristalsis, or breaking the balance between the function of the spinal inhibitory fibres and the accelerator fibres of the vagus. Dr. McConnell says that lesions to the liver increasing the flow of bile will serve as a factor in causing diarrhea. The muscles of the entire spine, especially on the left side are found cantractured and congested. Lesions may occur anywhere along the splanchnic area and as low as the coccyx. Dr. Still tells us that he always finds a lesion of the fifth lumbar in all cases of diarrhea which paralyses the lymphatic system of the bowels causing increased exudation. Innominate lesions, allow congestion in the mesenteric vessels and so reduce the vitality of the tissues. Irritations to the intrinsic plexuses of Meissner and Auerbach are another factor. These intrinsic nerves have to do with both motion and secretion of the intestines and over activity in them will cause diarrhea.

Pathology

The pathology of these simple diarrheas is in no way characteristic; some post mortems of very severe cases show almost no change, while others not so severe show areas of congestion, interspersed with anaemic areas with the mucous lining pale or slightly congested. There is an excessive production of mucus which resembles a catarrhal inflammation and gives rise to the term "Catarrhal enteritis." The point to bear in mind is that the actual inflammatory exudation is just the same as in any other organs under like conditions. There is little or no destruction of tissue unless the process has become ulcerative.

The bacteriology of these diarrheas of children also seems to be varied and uncertain. The normal intestinal flora may become over active, increased in number and virulence, the colon bacillus probably being the worst offender, but B. lactis aerogenes, B. pyocyaneus, streptococci lactis may also cause the irritation. The dysenteric bacilli are often found in the stools of many of the summer diarrheas, dysentery and cholera infantum. The bac-

teria found in impure milk in large numbers, after attacking the human organism become virulent and establish marked inflammatory conditions. The cry for pure milk to feed the babies cannot be agitated too vigorously.

Classification

In considering the clinical types of gastro-enteric conditions, we will try to study the characteristic symptoms of each type, so that a correct diagnosis of each phase might be possible. This is very important as some are self-limiting and a correct diagnosis will assit in outlining the treatment. Much difficulty is encountered in attempting a classification because of the interrelation of the process, continuity of tissue and the almost imperceptible transition of one type into another. Taking these considerations into account, these enteric conditions may be divided into three great groups:

(1.) Mild, with definite local symptoms: disturbances caused from faulty alimentation, climatic changes, etc., such as acute eliminative diarrhea and nervous diarrhea;

(2.) Severe form with constitutional symptoms, due to infection, and includes, acute intestinal diarrhea, fermentive diarrhea, catarrhal enteritis and dysentery;

(3.) Extreme severe form with marked prostration, cholera infantum.

Characteristic symptoms, from which differential diagnosis may be made:

Acute Eliminative Diarrhea—Usually follows over feeding in breast fed babies and is nature's method to ward off results of overloading the bowel. Regurgitation of food is an accompanying or preceding symptom, this does not refer to vomiting. The stools show evidence of hurried passage, containing undigested particles, but otherwise not changed. This type may also follow the ingestion of unripe fruit, etc., in older children. This type is self-limiting if the food supply is regulated.

Nervous Diarrhea — This is undoubtedly a reflex conditions following fright, irritableness of either infant or mother, overtiring or sudden change in weather. Deason, in his Physiology Research, explains that the function of the spinal viscero-motor cells on movements of the intestines are often influenced by psychical conditions which cause disturbance in nervous mechanism of peristalsis. There is increase in number of stools but no change in character, only showing hurried passage. There may be from four to ten stools a day. This type is also self-limiting.

Acute Intestinal Indigestion — Constitutional symptoms of nausea and vomiting may precede the diarrhea several hours, perhaps a day or two. Stools are at first fecal, then watery and contain much mucus; colicky pains, moderate tympanites, four to ten stools a day; temperature slightly increased; symptoms subside after emptying of bowel.

Fermentive Diarrhea—Abrupt on-set; high fever, griping pains, extreme nervousness, indicating a toxic condition, probably due to bacterial overactivity. Stools from four to twenty a day, extremely irritating, offensive odor and consisting of green translucent mucus. This type requires careful management.

Catarrhal Enteritis—This is usually a result of marked indiscretions in diet, among children past the second year. The illness begins, as a rule, with fever, height depending on severity of irritation, marked irritableness and restlessness. Even convulsive attacks occur. With the appearance of the diarrhea the fever falls quickly and nervous symptoms subside. Rumbling noises in the abdomen usually precede the evacuations and considerable gas is passed. The stools are light colored, contain undigested food particles and residue, as fruit seeds, hulls of vegetables, etc. There may be from two to three and eight to ten stools a day, following shortly after meals. The stools are passed involuntarily and for the most part have a fecal odor.

Dysentery—We will discuss the bacillary form of acute catarrhal dysentery, or bloody flux, as this is the type met with most frequently in this country. It is a specific infectious disease, caused by the bacilli dysenteriae; there is catarrhal inflammation of a part or whole of the large bowel with ulceration of the mucous membrane. The first symptoms are those of

acute indigestion with frequent thin, green or yellow stools, copious at first; later the discharges contain blood and mucus. The stools are frequent, every half hour, and small, sometimes less than a tablespoonful being found on the pad and are passed with straining and much tenesmus; after several days the discharges become brown or brownish green and still contain much mucus; vomiting is not a frequent symptom. The first twenty-four hours the temperature runs fairly high, but during the greater part of the attack it ranges from 99-102°. There is much prostration and loss of weight.

Cholera Infantum—This is one of the most pathetic diseases of childhood. First symptom is incessant vomiting, which is excited by drinking. The appearance of the patient is very characteristic. The face is pinched, pale and ashy color, eyes sunken, nose and chin pointed, fontanelles depressed, arms and legs half flexed, abdomen indrawn and skin wrinkled over extremities. The child is restless at first, later becoming dull, heavy and listless and there is intense thirst. The cry of these little sufferers is very characteristic and rings in your ears for hours after hearing it. The face, chest, abdomen and extremities are cold, head and spine hot. Rectal temperature may be two or three degrees higher than axillary and there often is profuse perspiration, which Dr. Still explains as being due to the difference in external and internal temperature, or low temperature preceding the perspiration, causing the gases to condense as hydrogen and oxygen condense on a bottle. The stools are profuse and very frequent, first fecal, brown or yellow in color with characteristic offensive odor, later becoming watery, which according to Dr. Still, is due to the union in the lungs of hydrogen and oxygen into water sufficient to drown out the nutrient principles of the blood.

The pathology of cholera infantum is more extensive than in the other forms of diarrhea. The mucous membrane appears swollen, somewhat oedematous, injected in spots and tree-like streaks showing slight erosions.

Treatment

When confronted with a little sufferer, tell him or her a story to gain confidence. The confidence of a child of any age is just as necessary as in adult practice and we must have their co-operation. To be a successful children's physician one must master the art of human nature, the art of patience, of firmness, tactfulness, the art of meeting them on an equal basis, which they can understand and appreciate and putting one's self on a level with them. Always be cheerful. Never allow a little patient to detect any anxiety by your expression of face, voice or manner, as they are very susceptible to suggestion and the atmosphere you dispel in the room is contagious to both patient and mother. Never be in a hurry and give your undivided attention to the child while treating, not spending the time in discussing his case or visiting with the mother or attendant. Attention to these little details will bring success many times, when if ignored the results may not be so gratifying.

The first step is the osteopathic treatment. Relaxation of the contractured muscles by strong deep pressure, call it inhibition if you will, bringing to our assistance the normal inhibitory function of the splanchnics. Gentle springing of the spine also seems to help in freeing the contraction. A general spinal treatment, if I may be permitted to use such a term, is indicated in these bowel conditions, as the whole vaso motor system is deranged as evidenced by the cold face, chest, abdomen and extremities, hot back and congested mesenteric vessels. Of course, the spinal bony lesion must be corrected, but just when in the course of the disease it is wise to attempt this, I believe depends on the vitality of the child and the severity of the condition, unless correction can be accomplished by the most gentle technique, as the correction of a lesion at any time is more or less a shock to the nervous system.

Sometimes I place the child on its chest on my lap or on its bed and extend the legs, gently pressing on spine, moving pressure with each elevation of the legs with some lateral bending of the spine at the

same time. This stretches the anterior spinal ligaments and affects directly the sympathetics. The Old Doctor says take the child in your lap and have him throw his arms over your shoulder, then begin at the 5th lumbar and adjust from the 5th lumbar to the occiput, remembering that it is a child you are handling and knowing well that it requires but little force to adjust and loosen up the entire spine. These disturbances clearly imply vasomotor derangement and it has been proven by research that spinal lesions in the splanchnic regions affect vaso constriction and vaso dilatation to abdominal viscera. Lesions in this area also derange peristalsis through the inhibitory fibres of the splanchnic nerves allowing the accelerator fibres of the vagus to predominate. Clinically, lesions from the eighth dorsal to second lumbar seem to affect the small intestines and this is the area for special work at this time.

Withdraw all food for twenty-four hours. If in a breast fed child, give small quantities of rice water at regular feeding intervals, gradually returning to full feeding. If in a bottle fed, or older child give either rice water or sterile water in small quantities as desired. Cathartics may be administered if necessary. I never recommend them but most mothers will have given a dose of milk of magnesia or possibly castor oil before calling a physician, unless they have been warned against such practice.

Much may be accomplished by irrigation in these cases. Use a small rubber catheter and fountain syringe. In the mild cases a single flushing may suffice, but in the severe forms and cholera infantum I like the continuous enema until the water returns clear. Use clear sterile water; if much prostration a weak salt, possibly a normal salt, solution could be used after thorough cleansing of the bowel. If the condition does not respond readily I use the Old Doctor's flour enema, made by browning flour in iron pan sufficient to make a quart of gruel and adding one-half pint of pure cream. Give half at one time, followed in six hours by the other half. Some use just browned flour and sterile water enema in these conditions with good results, but better results seem to follow the cream and flour enemas for my cases.

Washing out the stomach is indicated in some cases. A small rubber catheter with opening on side, joined by glass connecting tube to rubber about one yard in length with funnel attached. The child is wrapped in a pillow and held upright and the catheter introduced, funnel lowered to empty gastric contents, then filled with washing fluid and raised and held until fluid has flowed in, then lowered to allow fluid to run out. This procedure is continued until fluid returns clear.

The child should be bathed, often if the temperature is running high, put in clean bed with hot water bottles in blankets if the body temperature is much reduced, for he must be kept warm, and the bed pushed out on the porch, out of draughts, in the sunshine. Quiet rest is a great help and many mild cases will recover without any treatment other than regulation of diet. The loss of strength, anemia and emaciation progress rapidly and the strength must be supported in every way. Cotton pads may be used so that they may be burned immediately and done away with. The mouth should be wiped out often with some mild antiseptic.

Some nervous children have convulsions. When these occur, wrap them in blankets wrung out of hot water or dip the child into tub of hot water with cold cloth on head. However, osteopathic treatment to cervical region usually takes care of this condition, unless in very severe cases.

One of the most trying symptoms in these simple diarrheas is colic and griping pains. It is my experience that no method of treatment so quickly relieves it as osteopathic treatment to spine from eighth to tenth dorsal and gentle deep pressure over solar plexus. A hot water bottle may be applied to abdomen and epigastrium following treatment.

During the acute stage digestion is practically arrested. Therefore it is essential to omit all food for at least twenty-four hours or longer in severe cases, giving ster-

ile water in small quantities often. The fundamental principles of the dietetic treatment are, first, to empty the stomach and bowels of all fermented food which nature is trying to get rid of, and second, rest to the overtaxed organs, from twelve to twenty-four hours. This is sufficient in most cases, depending on the severity. After the first few hours rice water may be given. To make the rice water use one tablespoon of rice in quart of water and cook slowly in double cooker for four to six hours.

After the intestines have become quiet, weak broths may be given to children from two years and older. I like the results with mutton broth best or diluted skimmed milk, beginning half milk and water and increasing the milk with each feeding. For older children boiled milk is often well taken. When the stools are well formed the regulation diet regime may be resumed.

These auxiliary precedings are all necessary and good in their place, but it is the osteopathic treatments in conjunction with them which gives us results more satisfactory than other methods of treatment and win the friends for us. The perfect circulation of the blood means perfect cell life and if the body is in perfect structure, perfect function is bound to exist. As the Old Doctor says in order to have health we must have all the blood to all parts of the body all the time.

Goddard Bldg.

METHOD FOR CORRECTING ANTERIOR INNOMINATE

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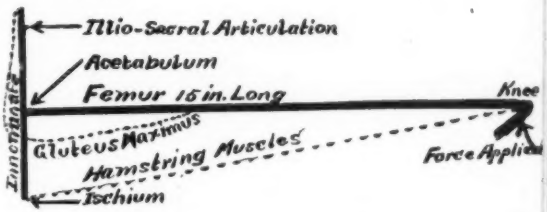
OMITTING all reference to diagnosis of condition, and confining my remarks to demonstration of correction, my technique for correcting an anterior innominate is as follows: Patient on his back with knee and thigh flexed, he interlocks the fingers of both hands and hooks them over the knee, keeping the elbows fully extended; he then pushes hard with the knee as if to extend the thigh, but resist the movement by pulling hard with the hands. The operator takes no part in this excepting directing the patient's movements.

After the patient has followed instructions, which is simply pulling with all his might on the knee and resisting with the femur muscles, extend the leg and make the usual comparative measurement of the legs. If the leg is still long ask the patient to pull again. Unless the patient is unusually weak he will make the correction on first trial. When I find such a case, I direct the patient to pull on the knee at night and again in the morning. The morning pull is probably the best as the patient is then rested and his muscles are more liable to be relaxed.



From this diagramatic drawing, which shows the femur at right angle to the innominate, you will note that the acetabulum is just half way from the ilio-sacral articulation and the tuberosity of the ischium. On my skeleton these points are each two and one-half (2½) inches from the center of the ascetabulum and the femur is fifteen (15) inches long. These dimensions will give you an idea of the amount of leverage in this operation.

The force exerted by the hands on the knee is downward toward the patient's shoulders. The force exerted by the hamstring muscles on the femur is downward towards the ischium. As the knee is a fixed point, these forces press the femur with great force against the inside of the posterior rim of the ascetabulum, while the ischium is being drawn by the hamstring muscles toward the knee and the posterior superior spine of the innominate bone is being drawn away from the sacrum by the gluteus maximus muscle. These forces all work in harmony for opening the sacro-iliac

Demonstration before the joint meeting of the Kansas and Missouri State Societies at Kansas City, Mo., May 13, 14, 15, 1915.

synchondrosis and forcing the crest of the ilium posterior.

Theory is good but experience is better. I can safely say that during the past two years, I have corrected more than fifty anterior innominate lesions by this method, and have not had a failure.

650 MINNESOTA AVENUE.

RADICAL TREATMENT OF SCOLIOSIS

M. F. HULETT, B. S., D. O.,
Columbus, Ohio

The Abbott method of treatment for scoliosis has received not a little attention in the past few years. At first it promised much for these otherwise hopelessly deformed. More recently these hopes have met with some reverses; not, however, because of any flaw in the theory. Reasons for this are numerous.

First, there is the unwarranted faith in the efficacy of new methods, theoretically reasonable, yet requiring long experimenting to perfect. Second, promises of too early cures, etc., largely as a consequence of this feeling. Third, straightening of the curve is not a cure. The deformities will recur unless correction, or rather overcorrection, is artificially long maintained, that nature by new growth may re-establish support for the bone, ligament and muscle tissues that have degenerated and become deformed in malposition. This comes through treatment that will aid such growth, and probably nothing brings it surer or better than does that of specific osteopathic vertebral adjustment, general spinal manipulation, and appropriate exercise.

A fourth element is failure of the patient to persist. The treatment is strenuous and annoying, even to the point of distress. He is practically ostracized while wearing the cast. He gets tired, discouraged, and will give up before completion of the work. Appreciable results appear so slow, and are not detected from day to day comparisons. When correction is nearly secured and the general outline of the body appears well, he is willing to quit, trusting in the permanency of these results. This is a fatal mistake. The deformity will recur.

Without a clear conception of the deformity, the pathology of curvature, correction cannot be expected. The drawing, Fig. 1, will help to get this in mind. It is a

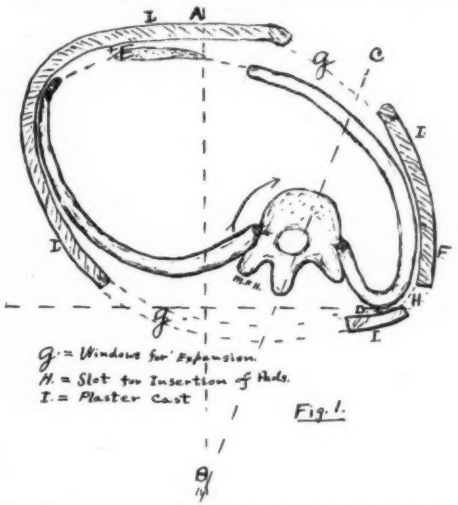


Fig. 1.

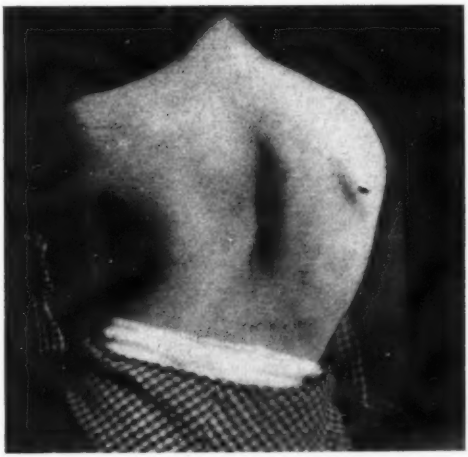
sectional view of the spine, rib deformity and cast, looking down upon a right dorsal scoliosis. Note the antero-posterior axis of the body, A-B, and compare with spine axis at point of maximum curve, C-B. Observe at normally acute angle of ribs on convex, and the reverse condition on opposite side. Note further how practically all of the viscera are crowded to the concave side of the spine curve. We must not forget, too, that, due to the curvature and rotation, the individual vertebral bodies have become compressed on the concave side, and are therefore wedge shaped and twisted.

Little, if any, satisfactory results are secured unless corrective force is applied in the opposite direction to that in which the deformity developed. The curve and rotation occurring together, increased in the direction of the arched arrow, Fig. 1. Correction, therefore, must be in the reverse direction.

Before applying the cast, force the spine into extreme flexion. (The deformity develops in extension.) Point D, the angle of ribs on convex side, is fixed against the cast. From that point toward the left side

is opened, and temporary pads removed, that the spine may rotate back to its original position in that direction and posteriorly, carrying with it the ribs, that their normal angles may be re-established. Correction pads are placed from time to time at points E and F inside the cast. (A late article by Dr. Abbott omits any reference to pads at F. It seems to the writer, however, that good may result from these pads, as so well explained by Dr. Geo. Laughlin at various times, especially after considerable corrective rotation of the spine is affected through pads elsewhere placed. Dr. Abbott also omits window in front part of cast.)

Some difficulty has been met in the use of felt corrective pads at points E and F, Fig. 1. They are hard to place properly after the cast is made—sometimes becoming folded, or causing wrinkles in the undershirt; this frequently producing pressure sores or other discomforts. And they are uncomfortably hot if the weather be warm. To offset some of these inconveniences I am substituting pneumatic bags, placing at a convenient point an ordinary bicycle valve. Small football rubber bladders, covered with canvas, make excellent bags. They



are placed in position collapsed, before applying the cast, and the valve is permitted to extend through the outside of the cast. With a bicycle pump they can be inflated as pressure is needed.

One may be misled as to the amount of curve in using the tip of a spinous process as a point of observation or measurement. In a slight rotation this point is comparatively further from the midian line than one

in which the rotation is greater. This is not, therefore, as will be readily understood by a study of Fig. 1, the best method of determining the extent of the curve or the progress of correction. The X-ray has a much higher value in this relation. The same principle is applicable to a comparison of photos and radiographs.

The photograph herewith shows results of a case now under treatment: A girl, twenty years old; deformity first noticed about ten years ago; no known cause for its development; patient in reasonably good health. She has had treatments of various kinds, including exercises under the direction of at least one somewhat famous orthopedic surgeon. Osteopathic treatment persisted in for months. But up to last December no correction of the deformity was apparent; in fact it seemed to increase from year to year.

The first photo is condition before applying Abbott treatment, December 1, 1914. Note extreme deformity of whole trunk and approaching of left shoulder and hip (compare with photo B). The tip of spinous process at apex of curve was two inches to the right.

The second photo is condition April 18, 1915, after removal of second cast. The spinous process now approaches very nearly the median line, rotation considerably reduced, and the hips, as you will note, are practically symmetrical.

In fairness it is necessary to add that the second photo indicates almost complete correction, while a radiograph shows considerable curve yet remaining. Also the position of the left arm as shown in the picture exaggerates the shoulder deformity.

8 East Broad Street.

ANNOUNCEMENTS FOR PORTLAND MEETING

General Arrangement Committee has practically completed its constructive work for the convention. Each committee has its work well in hand, and if interest and desire to do count, the efforts of the Oregon physicians will make for you the best and smoothest running convention of the A. O. A.

Dr. Roberta Wimer-Ford, of Seattle, Chairman of the Program Committee, spent several days in Portland recently and met with the members of the General Arrangement Committe and completed many details. The program prepared is more than worth a trip across the country to enjoy.

The Multnomah Hotel, our headquarters, will afford the opportunity for all necessary rooms and halls and is ideal for our work and needs. Our tourist crowd is increasing daily and we trust you will make reservations early, for if you do not the Multnomah may be unable to care for all. We have 250 rooms reserved and after that, first come first served.

Oregon and the entire Northwest wish you to attend this convention and urge you to come.

Following is the outline of each committee's work:

F. E. Moore, D. O., *Chairman.*
Mary E. Giles, D. O., *Secretary.*

Clinics—We are putting forth special efforts to make this convention the most successful in the history of osteopathy as far as clinics can make it so, and realize that this is one of the most important departments. In order to see that proper clinic subjects are at the right place at the right time the following will assist in the work: Otis Akin, K. S. Myers, M. M. Marshall, H. F. Morris, R. W. Walton, L. E. Hewitt and Elmer Smith. Each of these will have certain divisions to superintend and provide brief reports of the clinic subject so the demonstrators at a glance may be able to give the essential facts.

Among the most valuable features will be the work on eye, ear, nose and throat, which will be handled by Drs. Ruddy, Edwards and Reid. Ample time is provided for all to see the latest technique and treatment. Dr. Otis Akin will have a line of the most interesting orthopedic cases ever shown at any convention. Pott's disease, Abbott casts and club feet will be in evidence; special interest will be taken in the subject of manipulation of Pott's disease. There will be actual cases for all the regional osteopathic work which can thus be made practical in every case.

The Woman's Department of Public Health will pay special attention to children and the supply will be abundant; for instance, cases of malnutrition, marasmus, hereditary syphilis, mental and tubercular subjects.

We will have five rooms for clinics and technique and each room will have a platform so the operator and patient will be in plain view of everyone in the room. This we feel will be a great improvement over the usual arrangement.

I hope those taking part in the program will give us notice if they want special cases and we will provide them if they are in this part of the country.

Hubert F. Leonard, D. O., *Chairman.*

Press—This work, in connection with the convention, is handled through two means. First, the Press Bureau of the National Association has general charge of the general press activity in getting the publicity before the entire country. Much of the detail and practically all of the local work is carried out by our Press Committee, which is a subsidiary member of the General Arrangement Committee.

At the present time, and until the con-

vention, the efforts of this committee will be to arouse the interest of every osteopath in the United States in attending the convention, and with making people of the Northwest familiar with the fact that a National convention of osteopathic physicians will convene in Portland during August.

J. A. Van Brakle, D. O., *Chairman.*

Halls—This committee will have everything so arranged for the convention that down to the smallest detail the comfort and convenience of our guests will be anticipated and we trust they will have no difficulty in finding the various rooms, which will be plainly indicated for all regular and special sessions, as well as those for Committees, Alumni, Fraternities, Sororities, etc. There will be complete daily bulletins so placed on the mezzanine floor that the guests, leaving the elevator for the convention halls, may promptly inform themselves both regarding "regular" sessions and any "specials" or changes.

A monitor of ventilation will be provided, whose sole work will be to have complete charge of convention halls and the various rooms, so there will be no congestion of air at any time. There will be a force of "pages" who will be "ready for action" during the entire session of the convention.

The special departments for Eye, Ear, Nose and Throat, will each be equipped for demonstrations and seating capacity provided. The members of the committee will all be in active service at all times to aid our friends in every possible way.

Gertrude L. Gates, D. O., *Chairman.*

Finance—The financial aspect of the Portland Convention has been excellently cared for by the members of the Oregon Association. Its members have responded to requests for financial support in a remarkable way.

Sufficient money has always been in the treasury to care for the demands of the Committee of General Arrangements and there is still a fund which will be used for entertainment purposes and securing everything needful to a perfectly ordered convention.

L. H. Howland, D. O., *Chairman.*

Entertainment—This committee extends to all a most cordial invitation to arrive early, so that after your journey you may have time to become settled and ready for the greatest and best convention you ever attended.

We will be at the station to greet you, and from the time you reach the *Rose City* until you depart, it will be our pleasure and desire to dispense true Western hospitality. Not to try to see how very much we can entertain you, but to see how well we can entertain each and every one by arranging for those things which give the greatest pleasure to the individuals is our aim.

On Wednesday afternoon, we plan to make a real Oregon treat, and even the most learned and studious of our profession will return full—yes, drunk with three O's—"Oregon, Osteopathy, Oxygen," for we expect to keep you out in the open seeing the beauties of our West, unexcelled anywhere.

Our banquet for Thursday evening, we trust to make so very attractive that all will want to attend. Mr. Bowers, the host of the Multnomah Hotel, is noted throughout the Northwest as giving the most delightful and attractive banquets. Besides having the very best of good things to eat, we are arranging to have, not a slow, stupid, dreaded banquet, but one of mirth and good will, which all who attend will be thoroughly glad.

The Portland Convention will be noted as one most enjoyed by the wives of members and families, for the wives of our Portland practitioners will devote their time to assisting in their pleasure. Just one suggestion so you will truly enjoy yourself: Climate—Clothes.

Our climate is ideal, never too warm nor too cold, and you will eat and sleep with perfect enjoyment. Morning and evenings just warm enough not to be cold, and midday when "Old Sol" is out, a trifle warmer. Medium weight wool suits or silk suits and a top coat extra for evenings, or for the river or mountains. If wearing summer clothes of sheer materials, a wrap or scarf is desirable.

Come with the idea that when the regular sessions are adjourned, you will play and

enjoy our wonderful playgrounds with a willingness which will make all happy and delight your Oregon hosts.

H. C. P. Moore, D. O., *Chairman.*

Registration—The committee has plans well in hand, and hopes to carry on this department of the work without confusion. The floor plans of the convention hotel are admirably arranged to facilitate our work, allowing an arrangement so that all must pass into the registration room for registration before passing into the convention hall.

Our committee is undertaking something which we feel will materially assist those attending the convention. We are going to —not only keep a registration of those here and where located—but also know where you may be found while in Portland. Everyone must register, members and non-members of the A. O. A. alike; also members of your families or guests.

R. B. Northrup, D. O., *Chairman.*

Information—It is the aim and plan of the Information Committee to give information regarding this city, places of interest in and about the city, hotels and restaurants, the telephone and address of visitors, time and place of all meetings and general information.

Have all mail addressed to Multnomah Hotel, American Osteopathic Association Convention.

Katherine S. Myers, D. O., *Chairman.*

Reunions—This committee is progressing rapidly; many have made definite promises that reunions would be held. Among these are several class reunions as well as fraternal organizations. Every effort is being put forth by the chairman and members to have as large a representation as possible. Accommodations will be provided for all.

The Chairman of Reunions wishes to communicate with all who are interested in having meetings of fraternal organizations. Write him any information you have so he can arrange meeting places for you.

D. D. Young, *Chairman.*

Exhibits—Each year shows an increasing interest by members of the osteopathic profession in the exhibit feature, with the result that this interest has been an increase in the exhibit department up to the present year, and we trust that this important feature will be in keeping with the other attractions of this meeting.

There will be a display of articles which will be of interest, educational value and unlimited practical use. One thing that will add greatly to the demonstrations will be the entrance into the field of Pacific Coast manufacturers, who have not heretofore had the inclination or the opportunity to take space in conventions held East, and their lines will be new to most of us.

The exhibits will occupy one large room 50x88 feet on the mezzanine floor of the Multnomah Hotel, where the convention hall is located, and the wonderfully convenient arrangement of this floor for our purpose will give to the exhibits a prominence not heretofore enjoyed, and will make them so convenient and attractive that it is hoped that all will avail themselves of the opportunity to examine the displays. Not only are you requested to view these exhibits, but you are urged most strongly to ask questions and receive full information regarding them. You will be placing yourself under no obligation whatever, by so doing, but will assist in keeping up the interest in this aspect of our conventions which is already so well started.

If members are contemplating the purchase of supplies in the near future, you are requested to wait until you have viewed these exhibits and unquestionably you will profit thereby. The concerns which patronize us are certainly entitled to our patronage, and if we patronize them we patronize ourselves.

Wm. G. Keller, D. O., *Chairman.*

Health Sunday—Arrangements are progressing satisfactorily, and the pastors from many of our prominent churches are giving us their cordial and healthy co-operation.

We expect to fill a larger number of pulpits with prominent speakers from our profession this year than ever before.

B. P. Shepherd, D. O., *Chairman.*

TRANSPORTATION NOTES

MAKE YOUR RESERVATIONS ON THE OFFICIAL TRAIN TODAY

Remember the official train to the Portland meting is via the Chicago, Great Western and Great Northern Railway. Let us not be influenced to split up into smaller parties by going several different routes. After great care these roads were selected as most probably meeting the needs of those who attend the meeting. These official routes have gone to considerable expense to make this trip a success. If those who attend are considerate, the trip will be successful in every respect. Let us make our presence felt along the route by going as a body and not as individuals where our identity is lost.

The train leaves Chicago July 28. Send in your name to the undersigned today, stating space desired in order that you may be well taken care of.

The Sherman Hotel of Chicago has most kindly placed at our disposal a suite of rooms as headquarters for those passing through Chicago en route to Portland.

We mention two trips below which may be of particular interest to some. We also print below the list of transportation representatives for each state and urge you to get into communication with your representative and help to form a party from your state or section.

Notify me at once in regard to reservations.

E. J. Pratt, D. O.,
Chairman Transportation Committee.
27 E. Monroe St., Chicago.

From Southwest via Denver

For those in this section who find it impractical to join the official train at St. Paul, it has been arranged to take a special party from Denver over the Burlington, leaving at 2.45 A. M., July 29, arriving at Glacier Park, 8:50 P. M., July 30, where a wait will be made for the special train arriving a few hours later. Thence to Portland via the official route.

Those who find it convenient to make this trip should confer with Dr. Murray Graves, Symes Bldg., Denver, Colo, for reservations.

From Southern California

Dr. H. E. Beckwith announces the following trip for those who wish to go by boat from Los Angeles. It may also be convenient for many from the southwest who take in the San Diego Exposition first

The party will leave Los Angeles, July 27 via the San Francisco and Portland Steamship Co.'s boat, "The Bear," spending a day in San Francisco and reaching Portland Saturday, July 31.

Those purchasing tickets via Los Angeles or San Diego for Portland, if they wish this delightful water trip, must see that they read over the San Francisco and Portland Steamship Co. The fare is the same as the railroad charge, meals and berth being saved by this route, but railroad tickets are not interchangeable over this line. The boat line must be specified when the ticket is bought.

List of State Transportation Committee

Alabama—E. M. Sasvil, Montgomery.
Arizona—C. S. Bradbury, Phoenix.
Arkansas—L. J. Bell, Solomon Bldg., Helena.
California—Herman E. Beckwith, Los Angeles.
Colorado—Murray Graves, Symes Bldg., Denver.
Connecticut—Henry Carson, Jr., Bridgefield.
Delaware—Arthur Patterson, Wilmington.
District of Columbia—M. A. English, Washington.
Florida—E. M. Ingraham, Jacksonville.
Georgia—J. W. Elliot, Cordele.
Idaho—O. R. Meredith, Dept. Store Block, Nampa.
Illinois—C. H. Morris, 27 S. Wabash Av., Chicago
Indiana—Wm. Campbell Hall, Indianapolis.
Iowa—U. M. Hibbets, 721 Broad St., Grinnell.
Kansas—E. A. Moore, Belleville.
Kentucky—G. B. Frogge, Paducah.
Maine—E. A. Freeman, Osgood Bldg., Lewiston.
Maryland—Chas. H. Croxton, Baltimore.
Massachusetts—G. W. Goode, Boston.
Michigan—P. R. Hubbell, Detroit.
Minnesota—Ernest S. Powell, St. Paul.
Mississippi—R. L. Price, Jackson.
Missouri—Zudie P. Purdom, Kansas City.
Montana—Chas. L. Hawkes, Great Falls.
Nebraska—B. S. Peterson, Brandeis Bldg., Omaha
Nevada—Ralph H. Burdick, Tonopah.
New Hampshire—J. McClure Gove, Concord.
New Jersey—Fred W. Morris, Paterson.
New Mexico—C. H. Connor, Albuquerque.
New York—Ed. B. Hart, Brooklyn.
N. Carolina—Harold Glascock, Raleigh.
N. Dakota—H. W. Allen, Fargo.
Ohio—L. K. Sheperd, 528 Walnut St., Cincinnati; A. L. Miller, New England Bldg., Cleveland; J. H. B. Scott, New First Natl. Bank Bldg., Columbus; Lewis C. Sorenson, 334½ Superior St., Toledo.

Oklahoma—F. A. Englehart, Oklahoma City.
Oregon—W. G. Keller, Morgan Bldg., Portland.
Pennsylvania—J. Ivan Dufur, Philadelphia.
Rhode Island—S. L. Gans, Providence.
S. Carolina—R. V. Kennedy, Charleston.
S. Dakota—A. M. Glasgow, Sioux Falls.
Tennessee—J. W. Shidmore, Jackson.
Texas—Alfred J. Tarr, Wilson Bldg., Dallas.
Utah—Grace S. Airey, Salt Lake City.
Virginia—Chas. Carter, Arcade Bldg., Danville.
Vermont—Wm. W. Brock, Montpelier.
Washington—H. F. Morse, Wenatchee.
West Virginia—Emma Wells, Wheeling.
Wisconsin—E. C. Murphy, Eau Claire.
Wyoming—F. I. Furry, Cheyenne.
Canada—E. D. Heist, 39 King St., Berlin, Ont.

PROGRAMME

NINETEENTH ANNUAL MEETING, AMERICAN OSTEOPATHIC ASSOCIATION

Hotel Multnomah, Portland, Oregon,

August 2 - 6, 1915

MONDAY

10.00 A. M. Entire forenoon and afternoon devoted to business sessions Board of Trustees, Research Institute, all Delegate Bodies and Business Sessions of all Alumni, Class and Fraternal Organizations. The social sessions of these latter should be held on Wednesday night. For assignment of rooms for these meetings, correspondence should be to Dr. Gertrude L. Gates, Halls Committee, Portland.

8.00 P. M. Public Session in Opera House.
Outline of History of Osteopathic Practice.....CHAIRMAN

8.15 P. M. Popular Health Lecture.....R. KENDRICK SMITH

8.30 P. M. Revolutionary Methods in Osteopathy (Stereopticon).....T. J. RUDDY

8.50 P. M. Osteopathy in New Fields, Institutional care of Nervous Diseases, A. G. HILDRETH

9.10 P. M. "Some Nervous Diseases in Moving Pictures".....J. IVAN DUFUR

TUESDAY

9.00 A. M. Invocation, Address of Welcome, Response, etc.
President's Address.....C. A. UPTON

10.10 A. M. Etiology of Osteopathic Lesion.....CARL P. MCCONNELL

10.40 A. M. Osteopathic Treatment in Pneumonia.....GEORGE LAUGHLIN

11.10 A. M. Discussion from floor.

11.20 A. M. Gymnastics in Osteopathic Practice.....EVELYN R. BUSH

11.45 A. M. Informal discussion.

12.00 M. Recess.

2.00 P. M. Serum Therapy Relative to Osteopathic Practice.....S. V. ROBUCK

2.25 P. M. Informal discussion.

2.35 P. M. Pressure Anaesthesia; Substitute for Twilight Sleep.....M. E. CLARK

3.00 P. M. Orthopedics and Osteopathy.....H. W. MALTBY

3.30–4.30 Technique in five rooms—Ear, Cervical, Dorsal, Innominate, Orthopedic, Diagnosis. (Names of Technicians at end of Programme.)

4.30–5.15 Conference State Presidents and Secretaries.

TUESDAY EVENING—REPORTS

7.30 P. M. Bureau of Clinics.....IRA M. DREW

7.45 P. M. A. T. Still Research.....C. M. T. HULETT

8.00 P. M. Woman's Department—Bureau of Public Health.....JOSEPHINE L. PEIRCE

8.15 P. M.	Academy of Clinical Research	O. J. SNYDER
8.30 P. M.	Bureau of Statistics	W. H. IVIE
8.40 P. M.	Publicity Department	P. H. WOODALL
8.55 P. M.	Legislative Bureau	ASA WILLARD
9.10 P. M.	Associated Colleges	ARTHUR FLACK
9.25 P. M.	Osteopathic Publications	H. L. CHILES
9.40 P. M.	Department of Education	C. P. MCCONNELL
10.05 P. M.	Press Bureau	R. K. SMITH
10.15 P. M.	Board of Trustees	C. A. UPTON

WEDNESDAY

9.00 A. M.	Pathology of Osteopathic Lesion	JOHN DEASON
9.30 A. M.	Obstruction of Bile Passages not Due to Neoplasms	GEORGE STILL
10.00 A. M.	Discussion from floor.	
10.10 A. M.	Diagnosis of Acute Abdominal Conditions	GEORGE CONLEY
10.35 A. M.	Discussion from floor.	
10.50 A. M.	Treatment in Appendicitis	J. FOSTER MCNARY
11.30 A. M.	Adjournment for afternoon of Recreation and Sightseeing.	

WEDNESDAY EVENING

7.45 P. M. College Reunions, Class Jollifications, Fraternities, etc.

THURSDAY

9.00–10.30	Section Eye, Ear, Nose and Throat (1)	CHAIRMAN C. C. REID
9.00–10.30	Pediatric Section (2)	CHAIRMAN IRA W. DREW
9.40 A. M.	Address on Diagnosis of Osteopathic Lesion	HARRY FORBES
10.00 A. M.	Practical Demonstrations of same	HARRY FORBES
10:30 A. M.	Discussion from floor.	
10.45 A. M.	Etiology and Treatment of Innominate Lesions	H. H. FRYETTE
11.15 A. M.	Announcements.	
11.35 A. M.	Business. Election of Officers.	
12.30 P. M.	Recess.	
2.00– 3.30	Section—Woman's Health Bureau (3)	CHAIRMAN JOSEPHINE L. PEIRCE
2.00– 3.30	Academy of Clinical Research (4)	CHAIRMAN WM. E. WALDO
3.30– 4.30	Technique in five rooms.	

THURSDAY EVENING

7.45 P. M. Formal Banquet.

FRIDAY

9.00 A. M.	Diagnosis in Hysteria and Neurasthenia	CHARLES SPENCER
9.30–11.00	Nervous and Mental Section	CHAIRMAN EDYTHE ASHMORE
11.00 A. M. 11.25 A. M. 12.00 A. M.	To be announced.	

Monday, Tuesday and Thursday afternoons, Clinics, Surgery and Orthopedics.

Technicians.

M. E. Clark	Reginald Platt	Roscoe Lyda	T. J. Ruddy
Dain Tasker	C. D. Swope	George Laughlin	John Deason
C. W. Young	George W. Wood	Harry Forbes	C. C. Reid
H. H. Fryette	C. P. McConnell	Harrison Maltby	J. D. Edwards

SECTION PEDIATRICS—Thursday, 9-10:30 A. M. IRA W. DREW, Chairman

9:00 A. M.—Little Liars.....Ira W. Drew

9:15 A. M.—Osteopathic Lesions and Marasmus, Inanition, and Malnutrition .....Mary L. Heist

9:30 A. M.—Blood Pressure in Children, C. H. Muncie

9:45 A. M.—Tuberculosis in the Child, W. C. Brigham

10:00 A. M.—Mental Defectives.

10:15 A. M.—Hereditary Syphilis—Osteopathic Lesions Found.

WOMEN'S DEPARTMENT PUBLIC HEALTH BUREAU. Thursday 2-3:30 P. M.

JOSEPHINE L. PEIRCE, Chairman

2:00 P. M.—Plan, Scope, and Accomplishments of Department.....J. L. Peirce

2:15 P. M.—Importance of Clean Milk Supply .....Margaret Farnham

2:30 P. M.—Social Hygiene Movement, Millie Graves

2:45 P. M.—Cause and Prevention Tuberculosis.....Barbara McKinnon

3:00 P. M.—Conditions Due to Improper Care at Delivery..Mary B. Cornelius

SECTION ORTHOPEDICS—Tuesday, 3 to 4:30 P. M. OTIS F. ĀKIN, Chairman

Clinics by Geo. M. Laughlin, H. W. Forbes, R. K. Smith, H. W. Maltby.

ACADEMY OF CLINICAL RESEARCH—Thursday, 2-3:30 P. M. W. E. WALDO, Chairman

Demonstrators on Clinics, E. R. Proctor, C. D. Swope, Reginald Platt.

PROGRAM OF THE EYE, EAR, NOSE AND THROAT SECTION—CHAS. C. REID, Chairman

Wednesday, August 4

8:00 A. M.—Examination of Clinics

8:15 A. M.—Technique of Eye, Clinics, T. J. Ruddy

8:30 A. M.—Technique of Nose and Throat, Clinics.....W. V. Goodfellow

8:45 A. M.—Technique of Ear, Clinics, J. D. Edwards

Thursday, August 5

8:00 A. M.—Examination of Clinics

8:15 A. M.—Technique of the Eye, Clinics, T. J. Ruddy

8:30 A. M.—Technique of Nose and Throat, Clinics .....J. Deason

8:45 A. M.—Technique of Ear, Clinics, H. M. Goehring

Friday, August 6

8:00 A. M.—Examination of Clinics

8:15 A. M.—Technique of Eye, Clinics, T. J. Ruddy

8:30 A. M.—Technique of Nose and Throat, Clinics .....G. S. Hoisington

8:45 A. M.—Technique of Ear, Clinics, J. D. Edwards

DEPARTMENT OF OPHTHALMOLOGY

9:00 A. M.—Diagnostic Methods, W. B. Van de Sand

9:15 A. M.—Fundus Oculi (illustrated), C. E. Abegglen

9:30 A. M.—Osteopathy and Refraction, C. S. Sawtelle

DEPARTMENT OF RHINO-LARYNGOLOGY

9:45 A. M.—Follicular Tonsillitis....Chas C. Reid

DEPARTMENT OF OTOLOGY

10:00 A. M.—Diagnostic Methods.....T. J. Ruddy

10:15 A. M.—Research and Practice, J. D. Edwards

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Editorials

NEEDS OF THE EDUCATIONAL SITUATION

Some twenty years ago the profession was put upon its mettle by the effort to gain for osteopathy what we considered its rightful recognition by the public and legislative bodies. Our progress as expressed in the development of our system of practice, in the growth of our schools with their increased enrollment, not to mention the advance in research work, is a matter of record.

The profession cannot review this record without a feeling of just pride. There is much in this interval that it views with satisfaction; but, it seems to be true that there never was a time when the profession as a whole needed to give more sane thought to the consideration of our present position and our present needs. And this because of the progress in lines of endeavor all about us with which we must keep pace.

It seems important to place before us for our thoughtful study before we meet in convention some phases of our educational policy. This is done not to anticipate the report of the Committee on Education, or, in fact, to interfere in any manner with its prerogative. It is done because the points we have in mind are from the educational standpoint so fundamental to our future stability and growth that the individual practician and the colleges should have the opportunity to weigh them carefully and be prepared to express an opinion either in person or by delegate at Portland.

Briefly stated, it seems (1) that our schools should have a uniform entrance requirement of a four-year high school course, or its equivalent; (2) that they should have a carefully correlated four-year course; and (3) that they should select as instructors only such persons as are thoroughly grounded in osteopathic principles and are thoroughly and openly sympathetic to them.

Preliminary Requirements—The reasons for such an entrance requirement are obvious and fundamental. Standards of education in academic, vocational and professional lines are rapidly advancing. We must keep pace. There is no adequate reason for not doing so. There are strong reasons for doing so. We owe it to the respect we desire and demand for our educational standards. We owe it to our students. We owe it to our graduates as they take their places in the field, in order to secure for them privileges in practice which the success of their work justifies, and to secure the respect that they rightfully demand for themselves and for the school they represent.

But this demand comes not alone from the profession. One has only to glance at the record of growth of high schools in the United States to find confirmation of the fact. The day of the academy and institute which were attended for the most part by the sons of the minister, the lawyer and the doctor is passing. The man in the trades is de-

manding the same privileges for his sons and asking the state to provide the opportunities. Is it strange, then, to find that the pupils in High Schools in the country increased from 1900 to 1910 over 76%?

The West has contributed its share toward furnishing these advantages through its system of State Universities with the high school occupying its proper place therein. They are the leaders in our Western States while in the East we find individual states assuming the leadership and setting the standard which the others are following as rapidly as they can. In illustration, take the case of New Jersey. In 1903 there were fifty-five high schools with an enrollment of 12,980, or one high school pupil in every 153 children; in 1913 there were 122 high schools with an enrollment of 30,000 pupils, or one in every 94 children. In the United States in 1880 there were but 800 high schools and in 1914 there were over 13,000. These figures represent the answer to a persistent demand for a uniform advancement in *general* education. The public can demand or expect no less academic preparation for those who are to continue a technical or professional education. Nor can we, as professional men and women, sanely accept any lower qualifications from prospective students of osteopathy. It is most regretable that the graduates of any osteopathic school, otherwise amply prepared to meet examination requirements, are debarred entrance to examination by states because the college does not endorse the preliminary educational requirement.

But it is not alone in lines of general education that the public is making these demands. In New Jersey, again, there are some twelve or fifteen vocations that demand a four-year high school diploma as a prerequisite for later professional work. One may not doctor a horse professionally without this requirement.

This advancement of preliminary academic requirements is simply an indication of what is taking place in not a few of the other states. With these facts plainly before us can we close our eyes to the future and sit with idly folded hands?

College Course—Or can we any less disregard the obvious demand for a four-year professional course? We think not. That this change is fraught with serious problems to the schools, that it demands a rearrangement of curricula, that it may work hardship to some prospective students will be readily granted. That it will result in placing osteopathy in a position before the public and legislatures that cannot be questioned; that it will place the graduate in osteopathy in a position to demand equal recognition in his community with the practicians of other schools and to enjoy a greater respect for himself and his science; that it will bring to osteopathy a better and more earnest body of students, men and women who persist in acquiring osteopathy because of its efficacy despite the added difficulties; that, with a carefully correlated and rearranged curriculum, it will send out graduates who are thoroughly imbued with the osteopathic concept and who believe absolutely in osteopathy—these are the rewards that we believe will follow and will make for a greater osteopathy.

And we believe practically all practicians feel that this added year should not be one of frills or that the time be spent in coquetting with drug methods, but in genuine osteopathy, one important part of which would be demonstrating the effects physiologically of correction of the osteopathic lesion. One great field has barely been considered in our education—the reaction to treatment when observed and tested by laboratory methods. When this is done we are sure the student will be convinced that resort to drugs is unnecessary.

Nothing seems so conducive to the beginning of such correlated curriculum work as a conference at or before the convention between the representatives of our schools and the Department of Education of the A. O. A.

The Teaching Force—Finally, I am likewise fully persuaded that it is inimical to the best interests of the schools, to the proper education of their students and to the welfare of osteopathy if our schools employ as instructors men or women who themselves for any reason are not thoroughly grounded in the principles of osteopathy or who are not fully and openly sympathetic with them. We wish here to say that in making this statement we have no particular individual in mind. We are speaking of the practice.

From the standpoint of teaching as an art we unfortunately find less of the requisite training among instructors in professional schools than in academic institutions. It should not be so, but it is, and it is beyond our ability to remedy it and beyond our province to call attention to it except by saying that in whatever degree this skill may be lacking in that same degree we should expect other qualifications to make up the deficiency. Neither loquacity nor volubility of necessity makes a lecturer. Least of all does one who "damns with faint praise" or "assents with civil leer" make the right kind of an instructor in an osteopathic faculty. Too often does the temptation to question before a class another instructor's statements or to cast a witty slur upon the science to engage the good will of his hearers come to the immature and professionally inexperienced instructor. By this I do not mean that freedom of thought or of speech should be curtailed in our schools. I do mean that the teaching staff of our institutions should be thoroughly osteopathic in belief and in teaching, capable of making the osteopathic application of facts in whatever department of instruction they may be engaged. And why? No less, we believe, than in the grades or in the high school is the opportunity here presented to give the student really high professional ideals. The influence of a real teacher, earnestly seeking truth and loyal in its unfolding, is unbounded. Who cannot recall one or more teachers of his earlier or later years whose influence, whose instruction, whose conscientiousness, whose example of fidelity to truth were more valuable in establishing him in life than all his text books put together? There was no doubt as to where they stood, no equivocation, no vacillation.

Is the principle different in our professional schools? It is the same. The student coming to our classrooms has a wholly inadequate idea of what osteopathy is, if, indeed, he has any conception whatever. To him the instructors are the interpreters, the expounders, the counsellors. They to him represent osteopathy. To what endless confusion, vacillation and doubt may the unqualified teacher not lead the student? With what indecision and uncertainty may he not send him forth to battle for osteopathy? What osteopath has not noted the effect on the patient and on his family, of a shrug of the shoulders, of an inflection of the voice of an M. D. when he may have been in consultation with the osteopath. The mind of the student may be disquieted, poisoned in the same way by the unbelieving teacher. Verily neither *we* can "gather grapes from thorns nor figs from thistles."

Yet right here a tribute from the profession is due many who, for the advancement of the cause, established osteopathic schools, and to many who for years have freely given several hours per week of their time as instructors in our colleges. Their high-minded motives cannot be questioned nor was the value of their service limited save by their ability. They did what they could and if the critical practician did even very much less to show his interest in advancing the cause which is essentially the practician's cause our educational problems would already be settled through adequate support to the colleges.

I have spoken frankly and somewhat at

length on these fundamental points, feeling that they should be called to the attention of the profession for thoughtful consideration leading to such action at the Convention as may seem best to those assembled.

Finally, brethren, be strong in the faith, having the full courage of your convictions.

New York. L. Mason Beeman, D. O.

THE PORTLAND MEETING

In view of the fact that the location of this meeting is not convenient to the great majority of the profession, and the attendance entails considerable expense and inconvenience on them, the Journal feels called upon to again press upon the membership the importance of a full attendance. In adjusting itself to the rapidly changing educational and legislative conditions in the country the profession finds itself confronted with as grave problems as it has ever faced. Each of these annual meetings is called upon to give expression on these important questions. These expressions ought to be general and representative, coming from the entire profession. Not only is our professional pride at stake in what may be done or what may be neglected at these meetings, but no less our personal opportunities and success may be affected.

If conclusions are arrived at at the coming meeting, if changes of policy are made, which are not agreeable to us, we must not blame others or complain, if it were possible for us to be present and take part in these deliberations and we failed to do so.

As to the program, it furnishes a splendid inducement to attend. The work of the Arrangements Committee has been highly satisfactory. The opportunities for "Seeing America" which the trip affords is your opportunity, as perhaps never again can the trip be made at such a moderate cost.

Once more we want to urge every member to get into communication with the transportation representative from his state (see list in this issue) and try to use the officially designated routes in making the trip. This gives us not only the pleasure of traveling with many friends and congenial spirits, but it also gives us the advantage of publicity for the profession which cannot be gained unless we move as a body. Splendid hospitality awaits us and the most helpful and inspiring program will be presented.

AMENDMENTS

At the Philadelphia meeting announcement was duly made that at the annual meeting in 1915 a motion would be made to amend the Constitution of the American Osteopathic Association in the following particulars, to wit: Amend Article 6, Section 1, by inserting after the words "Ex officio" the following words:

"The ex-president for the year following his retirement," causing the Section and Article to read as follows: "The Board of Trustees shall consist of the President and Secretary ex officio and the ex-president for the year following his retirement and fifteen other members, five of whom shall be elected each year by the Association."

Notice was also duly filed with the Secretary of the A. O. A. by the New York Osteopathic Society under date of April 30th, 1915, to amend the By-laws of the American Osteopathic Association in the following manner, to wit:

ARTICLE I.—Individual Members.

(New matter in Italic.)

Section 1. Qualifications: Graduates of those colleges that are recognized by this Association (as amended July 29, 1912) *and are licensed to practice Osteopathy in the State, or States, in which they maintain an office, where such license is required by law,* shall be eligible to membership in this Association.

(a) The annual dues of members *of this Association who are members in good standing of the State Osteopathic Society of the State wherein they reside (where such Society exists)* shall be five dollars payable in advance. *The annual dues of members of this Association who are not members of the State Society of the State wherein they reside (where such Society exists) shall be five dollars plus the amount of the annual dues of the aforesaid State Society payable in advance.*

(b) Each application for membership made within three months prior to the close of the

fiscal year shall be accompanied by a fee of five dollars, *or more in pursuance of the provisions of Section 1, (a) of this Article,* which shall be credited as dues to the end of the succeeding fiscal year. All other applications shall be accompanied by a fee equal to fifty cents for each month from the date of the application to the end of the current fiscal year, which shall be credited as dues for that year; provided, that in no case shall such fee exceed five dollars. The fiscal year of the Association shall end on June thirtieth.

POST GRADUATE COURSES

It is with great interest that the JOURNAL notes the increased amount of post graduate work which is being done and the excellent facilities which are being provided for it. Few physicians, unless they are radically changing location, have time to take an additional year of work. If those who feel the need of it, and most of us should feel the need, would spend two to four weeks each year in doing such post graduate work as is now provided, the efficiency of the profession as a whole would soon be greatly increased. An hour a day of seriously well directed study running through a few years will increase the efficiency of any practitioner a hundred per cent. Post graduate study of this character is the best possible stimulus to well directed study.

The A. T. Still Research Institute has just closed another most successful short course. The following osteopathic physicians were enrolled in it and they have filed applications already for reservations next year for another course:

Drs. Georgia W. Borup, St. Paul; J. F. Bailey, Waco, Texas; Nell M. Berry, Tampa, Fla.; Veva Chalfant, Muncie, Ind.; J. T. Drake, Auburn, N. Y.; E. Good, Plainfield, N. J.; M. W. Henderson, Murfreesboro, Tenn.; E. G. Hornbeck, Rocky Mount, N. C.; F. P. Manchester, Bayonne, N. J.; A. Z. Prescott, Loraine, Ohio; W. E. Reese, Toledo, Ohio; Geo. M. Smith, Mt. Clemens, Mich.; Margaret Soreson, Naticoke, Pa.; Dorothy J. Stevens, Minneapolis; H. D. Sweet, Glens Falls, N. Y.; J. S. Wadsworth, Portland, Me.

Members of the April class were:

Drs. L. J. Bingham, Ithaca, N. Y.; F. A. Boulware, Nashville, Tenn.; Katharine Cherrill, Chicago, Ill.; Mary S. Crosswell, Oakland, Calif.; L. E. Faris, St. Louis, Mo.; E. L. Harris, Atlanta, Ga.; C. C. Hitchcock, Milwaukee; Anna H. Hurst, St. Joseph; Geo. A. McCole, Great Falls, Mont.; W. Banks Meacham, Asheville; Jennie C. Mitchell, Texarkana, Texas; Julia K. Nielson, New York; G. D. Wheeler, Boston.

The Chicago College of Osteopathy at the same time conducted a two weeks' post graduate course, which was also well attended and highly successful.

The College of Osteopathic Physicians and Surgeons of Los Angeles advertises a course following the A. O. A. meeting at Portland. The Los Angeles colleges gave highly satisfactory courses five years ago following the San Francisco meeting, and the course now proposed by the consolidated college there offers a rare opportunity to many to spend a profitable vacation.

PROGRESS IN CLINICS

In order to present an accurate report of the extent to which the clinic movement has grown, the Bureau of Clinics asks for a brief report from every city in which a free clinic is being conducted at this time.

The Bureau has been in communication with members in most of the larger cities and has had many favorable reports of work started during the past year. In order that each such clinic may have due credit for the work that it has done and in order that the sum total of this information may give great momentum to the work the coming year, it is earnestly urged that a report be made at once to F. M. Plummer, Secretary of the Bureau, Orange, N. J., or to Ira W. Drew, Chairman, Philadelphia, Pa.

MEETING FOR 1916

Several cities are already active in the field to entertain the 1916 meting. The Secretary will be glad to furnish all such committees seeking to secure this meeting, the character of information which the Board will need in determining the place of the next meeting and if there be other cities which intend asking to entertain this meeting, the A. O. A. Secretary should be notified at once.

FOR YOUR LOCAL NEWSPAPER

Osteopaths are earnestly urged to cut out this page and take it to the news editor of their local paper and request that it be published in whole or in part, as it is a legitimate news statement of unique new phase of the great campaign for the prevention of disease. If you have more than one paper and wish duplicate copies, write for them. Be sure to send clipping of this article from your local paper to Dr. R. Kendrick Smith, 19 Arlington Street, Boston, director of the A. O. A. Press Bureau.

BE SURE TO CUT OFF THIS PARAGRAPH AND GIVE YOUR EDITOR ONLY THE ARTICLES BELOW.

SAVE 100 BABIES A DAY

Five hundred babies die every day in this country from preventable causes. The women osteopaths of America have organized an intensive campaign for the purpose of saving the lives of one hundred babies a day. The women's department of the bureau of public health of the American Osteopathic Association, has organized this work upon a systematic basis and its activities are now evident in every city in the country.

Dr. Josephine L. Peirce, of Lima, Ohio, is chairman of this department and Dr. Ruth A. Deeter, of Harrisburg, Pa., is secretary. At the nineteenth annual osteopathic convention in Portland, Oregon, the first week in August, Dr. Peirce will report upon the progress of this work and will also be in charge of a section devoted to the campaign. The other members of the national executive committee of women osteopathic physicians who are devoting themselves to baby saving are: Dr. Roberta Wilmer-Ford, of Seattle; Dr. Margaret H. Farnham, of San Francisco; Dr. Jenette Bolles, of Denver; Dr. Ethel Louise Burner, of Bloomington, Ill.; Dr. Julia E. Foster, of Butler, Pa.; Dr. Ella B. Ligon, of Mobile, Ala.; Dr. Janet M. Kerr, of Toronto, and Dr. E. Florence Gair, of Brooklyn.

"Better Babies" competitive examinations have been held by women osteopaths in many cities during the past year, and hereafter they will occur in every city in the country.

Children's clinics have been opened in several hundred cities by osteopathic physicians. In many cases these institutions have been started in rooms furnished by churches.

"Children's Diseases" will some day be eliminated, according to the women osteopaths who are inaugurating a united effort to prove to the world that these conditions are not a necessary part of child life, as most mothers have been led to believe, and that they are really dangerous, in that they have a marked effect upon adult life.

Spinal adjustment in the case of babies and little children is the key-note of the preventive as well as of the curative treatment administered by the women practitioners in the osteopathic clinics being established all over the country, as they claim that correct vertebral alignment is easily secured and maintained at this period of life and that it prevents many diseases and weaknesses in the adult.

"Twilight Sleep" by the osteopathic method of pressure anesthesia and spinal adjustment is to be administered at the osteopathic convention at Portland by Dr. Marion E. Clark, of Indianapolis, an obstetrician of national reputation. The osteopathic profession has placed itself upon record as opposed to the drug method of painless child birth and offers as a substitute the osteopathic method which is devoid of danger.

Another feature of the campaign for the prevention of disease, as conducted by the osteopaths, will be the occupancy of the principal churches of Portland by eminent osteopathic specialists from other cities on the Sunday before the convention. They will speak upon various phases of health and sanitation.

Departments

CLINICAL DEPARTMENT

KENDALL L. ACHORN, D. O., *Editor*
Boston

HAY FEVER

As the hay fever season arrives, the following clinical experiences become of unusual interest and practical value.

Ralph H. Williams, D. O.

I am glad to give my experience with hay fever cases, which has been satisfactory from my point of view, though I have not accomplished what could be termed radical cures.

My observation has not led me to the belief that there is a definite bony malposition which is the cause of, or is constant in, hay fever cases. The only lesions which I have been able to definitely determine which are constant are as follows:

Muscular contractions throughout the cervical and upper dorsal regions, down to about the fourth to fifth vertebra; reduced mobility of the cervical articulations and the first three ribs; submaxillary contractures and vascular tension. There is of course the inflamed, swollen mucous membranes of the nose and in the region of the inner canthus of the eyes.

Treatment has, therefore, been general with a view to removing muscular contractions and immobility of the cervical and upper dorsal region. For immediate relief I have depended almost entirely upon strong pressure (and by strong I mean the entire weight of the body) on the glabella, and as much pressure on the bridge of the nose as the structures will stand. I follow this with steady inhibitory treatment of the posterior spinal nerves from the fifth dorsal to the occiput.

Treatment is given at least every other day and often daily throughout the first week or ten days of the hay fever season and with lessening frequency until the condition ceases. My experience has been that it does no good to do any preliminary treatment in the absence of definite body lesions, for the hay fever will come on just as hard as though nothing had been done. I have met with uniform success where the patients will follow out instructions.

I do not often succeed in entirely stopping a severe case the first season though there will be material relief and the period somewhat shortened. The second season it will be less troublesome, and it will take less time and less treatment to get it under control. The third year it is usually very light, and is got under control readily, and lasts but a short time. The fourth season if they have any trouble at all it is insignificant, but must be thoroughly broken down which can be done in a short time. Sometimes I have not seen them at all the fourth season, and have seen none of them on the fifth season.

My experience of the relief by pressure on the glabella and bridge of the nose seems to correspond with the experience of Dr. Herman Goetz with his vigorous treatment over the antrum, and I am interested in Dr. Edwards' findings in regard to treatment of the nasal mucous membrane digitally. It rather looks as though he may have got closser to the definite cause of the irritation, and I shall endeavor to try out that method this summer.

J. Corwin Howell, D. O.

About May 1st each year for the past six years, T. B. L., male, age 29, was taken with violent attacks of hay fever. All the classic symptoms were present and continued with more or less violence until fall.

Family history good. Habits good, with exception of smoking. Neurasthenic tendency.

Structural examination: Upper dorsal anterior and sensitive at 3, 4, and 5 dorsal. Tonsils enlarged, naso-pharynx congested, number of synechia present. Catarrh of naso-pharynx and nose. Schneiderian membrane congested throughout. Turbinates swollen badly.

Urine normal. Hemoglobin 85%. Blood pressure 130.

General treatment to upper dorsal with reduction of lesions. Manipulative treatment to neck and throat externally. Manipulation of tonsils and Edwards treatment to naso-pharynx and nose.

Patient was seen every day for first week; then three times a week for one month. Edwards treatment every day. Tonsils removed. Hay fever practically ceased after third treatment. One year later patient reports no return of disease.

Ella R. Gilmore, D. O.

Mrs. F., age 36, mother of two children, had had hay fever for nine years. Found great contractures of the muscles around the atlas and axis, with tenderness and swelling pronounced at juncture of cartilage supporting the alae with the nasal bones on both sides.

Treatment consisted in gently separating car-

tilage from nasal bones by traction to left for freeing right nasal artery and traction to right to free left artery. This gave local relief, though I have regarded freeing tension around axis and atlas as the curative treatment.

First year, began treatment at the height of the attack; partial relief was given. Second year, began treatment two weeks before attack was due; result, no hay fever appeared. Third year, began treatment one week before attack was due; result, no hay fever, after which family moved to Canada. I recently learned there had been no return in six years.

In several other cases I have found practically the same lesions of the spine and nasal cartilages, with excellent results from treatment.

L. E. Faris. D. O.

I note by the October JOURNAL that Drs. W. J. Conner and R. H. Williams give their experience in the treatment of hay fever. I note also that both gentlemen claim good results in about 50% of their cases.

I have been using a treatment which I am convinced if practiced will result in a much larger percentage of cures. The technique as practiced by Dr. Conner will give results in a large percentage of cases, and combined with Dr. Williams' technique even greater results might be obtained. However, I am satisfied there are a great many stubborn cases that will not yield to such a treatment, and it is for these cases, as well as others, that I have used the following technique:

Patient is placed on back, and after being anesthetized the little finger of either hand is inserted into the anterior nares from before backwards. In doing this you will encounter adhesions which should be thoroughly broken down, by a rotary motion of the finger with quite a little force, which will accomplish this without any trouble. Then before the finger is withdrawn the hand should be turned over so palm of hand is turned up and as finger is withdrawn considerable pressure is exerted upwards against the roof of the nasal cavity thus ridding that cavity of any and all obstructions. This will produce considerable hemorrhage, but in all cases coming under my observation, this has lasted but a few minutes. Any good antiseptic solution can be used in cleaning the nasal cavity after the operation. I think for post-operative cleansing normal saline solution has proved to be particularly beneficial. In the European ear, nose and throat clinics the normal saline solution is almost universally used.

Often a crooked septum will be encountered. This can usually be forced into place by the finger and then the nose should be packed with lubricated gauze to hold the septum in place. The turbinates will always be found to be congested and large. These should be treated along well-known methods for reduction and in some cases they should even be removed.

Care should be exercised after the operation to see that all sinuses drain properly. In fact, the post-operative treatment for at least ten days should be of the best, as on this the better results depend.

I believe if the above procedure is carried out, together with the exercising of the good judgment of the operator in every case so handled, it will produce results beyond all expectation. This technique also applies to all forms of chronic catarrhal rhinitis.

George J. Helmer, D. O.

I have treated a great many cases. Have recently talked with a gentleman whom I treated and cured in August, 1896. He had had hay fever for fourteen years. I treated him three times, August 13th, 16th, 17th. His case was a typical one and I made a careful record of my findings.

The heads of the first and second ribs on the left side had slipped upward on their facets. The third rib, left side, which sets on a demi-facet had slipped forward and toward the median line. Without going into details with which every osteopath is familiar, as to how such a lesion would affect the nervous, lymphatic and circulatory systems, it will be sufficient to say that the efficiency of that center had been reduced, lessening the vitality of the Schneiderian membrane and rendering it susceptible to gases, dust, etc., peculiar to that season of the year. When the vitality of said membrane had come back to normal it was no longer susceptible.

I do not mean to say that every case of hay fever is caused by the above described lesion, as there are probably a dozen other causes. I have had a great many cases and a record of ninety per cent. cured.

U. S. G. Bowersox, D. O.

The treatment of hay fever has not been a universal success in my practice. The cases I have been successful with were handled osteopathically, though I have had more failures than successes. I found the lesions, fixed them, and let them alone. My best results have been in cases when I have had the lesions corrected before the time of the attack. The following case is typical of the cases I have been successful with, and also as to lesions in many of my failures:

Mrs. N. R. McC., age 37, had hay fever for six years, attacks coming on about April 1st and continuing until frost. Started treatment in last week of February.

The lesions found were at the atlas, axis, third and sixth cervical, second, third and fourth dorsal (the third being rotated extremely to right), fifth lumbar, and right innominate posterior. The second, third, fourth ribs of both sides affected, the right side rotated upward, the left downward.

This patient had three months' treatment. No return of the symptoms after three years, except slight burning of the eyes following a cold which

occurred just recently when specific work upon the third dorsal gave relief.

A. M. Smith. D. O.

I firmly believe the typical case will never fail in responding to the vaso motor reflex existing between the tenth dorsal and the Schneiderian membrane. This reflex I excite by having patient lie on stomach on table, and exerting deep, steady pressure over tenth dorsal spinous process ("straddling" process with end of thumb, and first finger flexed at first distal joint).

The above proceeding never fails to express a sensation of fullness and pressure in nose and frontal sinus.

In the last fifteen years of practice, with scores of cases treated, I have the first failure yet to record of the existence of the reflex mentioned. Where I have been accorded a reasonable season for treating, I have not had a real failure to cure, or decidedly relieve.

Personally I would consider osteopathic treatment of this malady incomplete if the tenth dorsal region was ignored; although other matters must be considered in diagnosing and treating most cases, details of which I do not consider at this time.

My cases include hay fever of ten to forty years duration.

If you have a copy of my Diagnostic Chart note "tenth dorsal" on diagram of spinal connections and centers.

W. J. Conner, D. O.

When I was a boy I learned that to press the ball of the thumb against the roof of the mouth would abort a sneeze when I felt one coming. When I became an osteopath and was called on to treat hay fever it recurred to me that pressure on the roof of the mouth would stop a sneeze. I began to study out why it did so and came to the conclusion the antrum had something to do with it. As I studied the cases I came to the conclusion that the pollen from the weeds filtered through small openings from the nose into the antrum; these irritating bodies set up a congestion of the mucous membrane, producing the condition we call hay fever. The sneezing is nature's effort to expel the foreign bodies.

With that hypothesis before me I began to think, how could these openings be closed?

My treatment developed was as follows: With the patient on the back I gave strong bruising pressure on the sides of the nose just over the antrum openings. The object was to produce an irritation sufficient to constrict the openings so that the irritating bodies could not get through. It may be the treatment adjusted the bones of the face so that the openings were closed as the openings are between the articular surfaces of the facial bones. The treatment is quite painful but the discomfort does not last long. I always treat about a month before time for hay fever to begin. I have not had any success treating a case during an attack.

To illustrate the treatment: A lady whose mother had had hay fever all her life and two sisters similarly afflicted since childhood, came to me for treatment. She had formerly gone to Colorado each year during the hay fever season, but this year a young baby prevented her going. Her case had developed to the asthmatic stage. I had her come for treatment a month before time for the attack. When time for hay fever came she was perfectly free from the trouble. The next year I treated her two sisters as I had treated her. One made a perfect recovery. The other I treated for two consecutive summers but with no success. Previous and subsequent experiences in other cases have been about the same.

C. D. Berry, D. O.

I have treated a number of cases of hay fever and as a general rule the cases are either cured or much benefited. For a specific case will give one somewhat out of the ordinary.

The patient was an old gentleman about 65 years of age and complained of having hay fever in the winter. This was a typical case, had all of the symptoms that a patient would have in the summer or autumn. I also found the usual lesions such as disturbed upper ribs, contracted muscles about the neck and shoulders. Continued treatment seemed to help the case but I was unable to correct the trouble and in desperation I began to make inquiries as to conditions at his home. I found that the patient was in the habit of working in the basement at a carpenter's bench, a few hours each day and that this bench was in the same part of the cellar as the furnace. Further investigation brought out the real cause of his hay fever, viz., the furnace pipes were leaking coal gas. Corrective treatment—new furnace pipes.

I give you this particular case, thinking that some osteopath may be able to profit by it and thus save osteopathy being discredited with failure.

BUREAU OF PUBLIC HEALTH

JOSEPHINE L. PEIRCE, D. O., *Chairman*
Lima, Ohio

The splendid clinic for women and children being conducted by Florence Gair, D. O., of Brooklyn, N. Y., is receiving much editorial comment in the metropolitan dailies. Dr. Gair devotes five forenoons and one entire day each week to this very commendable work and she states that the conditions are pitiful, the clinics being crowded to the limit with every kind of afflicted sufferers, and the available facilities falling far short of meeting the demand, although she reports having treated as high as 50 in a day.

Jeanette H. Bolles, D. O., of Denver, Col., has conducted fifty Baby Conferences during the year and examined 1,000 babies at various Parent-Teacher Associations and Osteopathic Associa-

tions. Through her efforts the Women's Department has been endorsed by the Colorado Osteopathic Association, the Denver Osteopathic Association, and the Northern Colorado Osteopathic Association. At the recent Kansas and Missouri Association meeting, under Dr. Bolles' leadership, the women conducted a very successful Baby Conference.

Carrie Benefiel, D. O., as a member of the Executive Board of the Social and Moral Hygiene Society of Spokane, Wash., has given many talks to High School girls and also to the mothers. Recently she addressed the Inland Empire Teachers' Association.

A valuable work is being done among factory girls in Wheeling, W. Va., through Health Talks by Clare E. Sullivan, D. O., of that city.

Seattle, Wash., has just completed a series of Better Baby Conferences. The city was divided into twelve districts and an examination was conducted daily until the twelve districts were covered. Many of our osteopathic women assisted in these examinations. Dr. Roberta Wimer-Ford assisted four days and gave twenty health talks, besides. The Seattle osteopathic women organized in January and have held one meeting a month since.

"Better Hygienic Conditions in Our Schools" was forcefully touched upon by Emily Scott, D. O., of Harvard, Ill., before the Fortnightly Club of that city.

The women of New Jersey have organized a Woman's Department of Public Health, holding their first meeting in Newark in March. Helen F. Smith, D. O., State Chairman, informs us that the women were eager to co-operate. Dr. Stephens, of Newark, is starting clinics in their Settlement House and meeting with success.

Carrie Mundie, D. O., of Mendota, Ill., has charge of a Baby Health Conference recently in which there was splendid interest developed.

We are pleased to note the organization in Kansas with Gladdis Armor, D. O., of Emporia, as State Chairman. The committee is developing its plans for the coming year's work.

The Public Health Committe of the Ohio Federation of Women's Clubs, of which Josephine Peirce, D. O., chairman, has been conducting a campaign of education in Social Hygiene during the past winter. A series of three meetings has been outlined to be carried on simultaneously in all cities in the State. Through her efforts also, as chairman, petitions indorsing the Injunction and Abatement law, which was pending before the State Legislature, have been freely signed by club women throughout the State and sent to their respective legislators in the General Assembly. Dr. Peirce, as special agent of the Children's Federal Bureau, has also co-operated with Miss Lathrop, chairman of the Bureau, in conducting Birth Registration Tests held in every county of the State. She is also a member-at-large of the Public Health Department of the General Federation of Women's Clubs.

Anna Pollock, D. O., has been appointed chairman for the District of Columbia, and Roberta Smith, D. O., of Lynchburg, chairman for Virginia, in place of Dr. Willard, who is absent from the State.

Every woman who has been active in Public Health work during the past year is requested to report her special work to our chairman, Dr. Josephine L. Peirce, Lima, O., at once. This information is necessary that she may complete her report for the Portland meeting.

MENTAL THERAPEUTICS

G. H. Snow, A. B., D. O.

Psychology—Sensation (continued)

Hearing—The ear is the external organ of the sensation of hearing. A vibrating body communicates its vibration to the air and these vibrations of air are received by the ear and communicated to the brain. The sensations which the ear receives may be divided into two classes, tones and noises. Tones may be defined as periodic vibration and the vowels of the language are tone combinations. Noises are unperiodic vibrations and the consonants are true noises. There are different directions in which the impressions of hearing or sound may vary.

First, it may vary as to quality; for instance, compare the color tones of the note called middle "C" on different makes of pianos. The tuning fork gives a simple tone and our knowledge of physics tells us that the tones of the piano are not simple but complex. This complex character gives to the tone a peculiar character called timbre. Musical instruments are physical structures, which never produce one physical tone alone but always a combination of several tones, in simple arithmetical relations. To the simple tone is added over tones. The additional tones are weaker and have two, three or four and so on, times more vibrations. The mental effect of these weaker tones or vibrations does not produce an impression of co-ordinate tones but only that well-known shading of tone which produces the character called timbre.

Second, a tone may vary in the direction of being lower or higher; that is as to pitch. The audible limits of sound perception range from about twenty vibrations per second for the lowest tone to about fifty thousand vibrations per second for the highest tone. In the middle region of musical hearing a change of one-fifth of a vibration can be detected by a well-trained ear; while in the region of the highest tones a difference of several hundred vibrations is needed to make two adjacent tones distinguishable. The sensitiveness of the ear to differences of pitch varies greatly in different persons. There are those who are totally insensible to differences in pitch. "Yankee Doodle" and "America" sound the same to them and to them all beautiful rhythmic sounds are reduced to a continuous monotone.

Third, a tone may vary as to being loud or soft; that is in intensity. The strength or intensity of a tone depends upon the amplitude of the vibration which produces it. That is, the harder a vibrating body is struck, the greater will be the height of the wave vibration and the greater the intensity of sound.

The study of tones assists to a better understanding of noises as many of the noises contain strong tone elements. Noises may be divided into two classes: those that correspond to single, explosion-like air movements such as cracks, snaps and clicks called sudden noises; while such as buzzing, hissing, rumbling, roaring, rustling, whispering and howling are called continuous noises.

Different theories have been propounded as to the manner in which the vibrations of air are received and transmitted by the ear. The one that seems plausible is that the ear possesses analytical power and that it resolves the complex vibrations into simple elements. The internal ear is the part most concerned in the function. It has been likened to a harp with thousands of strings which respond sympathetically to the external vibrations. However, there are no strings but a membrane is stretched in such a manner that it responds to the vibrations. One part of the membrane responding to vibrations of a certain pitch and other parts responding to vibrations of another pitch and so on. Let us follow the course of the vibrations.

The outer ear collects and directs the vibrations of air so that they strike the tympanic membrane, which transmits the vibrations by means of the ossicles and membrane closing the fenestra ovalis to the liquid in the spiral cavity, the liquid in the spiral cavity acts upon the fibers on the membranous labyrinth and the fibers respond sympathetically to the vibration, each fiber responding to a vibration of a certain pitch. Each one of these fibers is connected with its special nerve cell in the brain and the stimulation of the nerve cell is accompanied by a tone sensation of special pitch. Thus the complex sound wave, or vibration, is resolved into its simple elements. Further these simple tone elements enter into memory processes and this memory process depends upon processes of association and these association processes can be easily understood if they are explained by the action of the nerve fibers which connect locally the different cells. The fibers from the membranous labyrinth unite as they pass from the membrane to the brain cells, and from the auditory nerve. The sense of hearing means much to man. Simple and inarticulate tones express very deep feeling even when no words are coupled with them You understand the sigh, grunt, laugh and whine even though no words accompany them.

The nerve center in the brain of the sense of hearing is located in the temporal lobes. Experiments on the lower animals have produced different results. Experiments have been performed on dogs and monkeys in which the removal of both temporal lobes produced total deafness in some cases and in others only partial deafness. Brown and Schaefer found that in one monkey the removal of both temporal lobes produced mental depression for about two weeks and after that hearing seemed normal and the animal was unusually bright and smart.

In man there is no question but that the temporal lobes are the seat of the function of hearing and the essential part is the superior convolution adjacent to the Sylvian fissure. Sensory aphasia furnishes some information concerning the auditory center in the brain. Sensory aphasia is due to lesions which interfere with the formation of associations necessary for complete perception or a loss of the understanding of words. A patient with this disease may read, write and talk, but he does not understand what is said. In such cases the lesion has been located in the posterior two-thirds of the first and second temporal convolutions and upward into the supra marginal convolution.

But word deafness rarely exists alone; it is often associated with cortical motor aphasia; and frequently with visual aphasia as the auditory and visual centers are located near each other. Seasickness is said to begin with the ear. The arrangement of the semi-circular canals is such that the peculiar motion of a boat unduly agitates the fluid in the canals. The fluid transmits this pecular stimulation to fibers of the auditory nerve. The auditory nerve on its way to the brain passes very near the brain center of the stomach and the stimulation is so strong it affects the stomach center and this produces seasickness. In deaf mutes there is an affection of the semicircular canals and they do not suffer from seasickness.

Taste— The organs of the sense of taste lie in the circumvallate fungiform, conical and filiform papillae of the tongue. Taste bulbs of the different elements of taste may be found in a single papilla. In different parts of the tongue there are regions which respond to one taste element more than another; for instance the sensation of bitter comes from the base of the tongue, while sweet and sour are tasted at the tip of the tongue. Psychological analysis divides the taste elements into four classes—sweet, sour, salt and bitter. Some authors add two others, viz.: alkaline and metalic, but these are more likely compounds of the others given above. Many that are generally called taste elements are only fusions or compounds of taste with pressure, temperature and smell. The attractive smell of food and the disagreeable odor of impure or poisonous substances are strong hygienic regulations to guard us in our actions. However these are not always safe guides to follow for some poisonous gases have no odor and some poisonous chemicals taste sweet. When the temperature of the end organs is extremely hot or cold the sensation of taste may be greatly modified or even

entirely obliterated. Take a piece of ice and hold it on the base of the tongue for some time, then remove the ice and place some quinine in its place. You will find that the quinine does not taste bitter.

As to the location of the nerve center in the brain for the sense of taste, what little is known about it seems to point to the lower temporal lobe regions.

Smell—The external organs of smell are simple and located in the nose. They consist of hairlike processes which project from the mucous membrane. These hairlike processes are connected with the olfactory nerves which carry the stimulation to the nerve centers in the brain. The nerve center in the brain of the sensation of smell seems to be the median descending parts of the temporal lobes.

In inspiration the currents of air bearing stimulating particles come in contact with these hairlike processes and this stimulation produces the sensation of smell. If the organs of smell are continuously stimulated with one substance for a few minutes they become fatigued and cease to respond to that particular substance but soon recover if the stimulating substance is removed. But fatigue for one substance or odor does not necessarily involve fatigue for others.

For a large percentage of substances the minimum amount which will produce the sensation of smell is very small. One two-millionth part of a milligram of an alcoholic solution of musk is perceptible; while one four hundred and sixty millionth of a milligram of mercaptan is sufficient to act on the olfactory region.

No satisfactory classification of odors has been made. What is pleasant to one individual may be very unpleasant to another, so they cannot be classified on that basis. There is a very common practice of naming the odor from the object which produces it, as the odor of coffee, of the apple, of the violet, etc. In a general way odors may be classed as fragrant, depressing, refreshing, sickening, spicy, virulent, noxious, etc.

An odor which is very pleasant in health may be very disagreeable when one is weakened by disease. Paralysis usually affects the sense of smell and also that of taste. A paralytic mistook the odor of vinegar for that of whiskey and another that of onions for lemons.

(To be continued.)

RHINO-LARYNGOLOGY

CHAS. C. REID, D. O., Editor,
Denver

DISEASES OF THE NASO-PHARYNX

Adenoids *(Continued)*

In the last issue we gave the etiology of adenoids. We now proceed with the symptomatology and treatment. The growth may be a soft diffuse mass, a small central cushion or a large hypertrophy. The upper end, that nearest the choanae, is thickest. The mass is harder and shrunken in older people. Recently I saw an adenoid mass about the size of an English walnut in a woman twenty-five years old. It looked smooth and firm. All people have the pharyngeal tonsil and in childhood it is larger, softer and congested more than after puberty. Many of these which have been enlarged shrink after twelve years of age and frequently leave cicatricial bridges or adhesions in the orifice of the Eustachian tube and in the fossa of Rosenmüller. These adhesions prevent proper drainage in the naso-pharynx, initiate and prolong catarrh and eventually the closure of the Eustachian tube thus bringing on catarrhal deafness. There may be foul, cheesy secretions in the crypts of adenoids a little similar to that in lacunar tonsillitis.

Symptoms—Thompson classifies the symptoms of adenoids under five heads: (1) those due to nasal obstruction; (2) secondary infections; (3) disturbances in secretion; (4) reflex symptoms, and (5) constitutional changes.

After three years if there is nasal obstruction they take on the typical adenoid appearance. The mouth is open, lips thick, teeth project, chin recedes, nose is pinched, and a stupid look. May breathe noisily, get out of breath easily, restless in sleep, mouth gets dry. Bolt food, have a "dead" voice, nose often bleeds.

At a recent child's conference in Greeley, Colo., which was superintended by Dr. Jenette Bolles, I examined the eyes, ears, noses and throats of over fifty babies. While an exact record of percentage was not made, I estimate that forty to fifty per cent. of those above three years of age showed signs of adenoids in some degree and five per cent. had had suppurating middle ear trouble. Abscess of that type is mostly caused from adenoids. Pains in the ear and variable slight deafness are often due to adenoids. Eye symptoms as conjunctivitis, blepharitis and keratitis may result.

Cervical gland enlargements are common and tuberculosis may gain an entrance. Chronic bronchitis, anemia, gastro-intestinal catarrh and vomiting may be traced to adenoids. Mucous secretion is increased, mucous glands may be occluded forming retention cysts.

Some of the reflex symptoms are eneuresis, night terrors, twitching in sleep, asthma, laryngismus stridulus, chorea, petit mal, stuttering, convulsions, restlessness, reflex cough and hawking.

Constitutionally the child is not robust; it may have retracted chest or pigeon breast and an arched palate. Mentally he is listless, irritable, and reclusive. Aprosexia is common.

Blood examination shows anemia and leucocytosis.

Diagnosis.—A diagnosis is often easily made from the face alone (the adenoid facies). Enlarge cervical glands increase the probability. History of aural trouble makes it almost a certainty. These signs combined with many symptoms will make a diagnosis more clear. With

posterior rhinoscopy the mass may be seen. In most children posterior rhinoscopy is not practical. By thrusting the finger in the naso-pharynx a positive diagnosis can be made. This is not always necessary.

Prognosis.—Adenoids tend to atrophy between the ages of ten and fifteen years. This information which is generally understood causes many people to neglect their children, to await the time when they will get relief by "outgrowing it." Before that time is reached, however, there may be much damage done to the appearance, voice, hearing, nervous system, mental character and physique.

Where the pharyngeal tonsil becomes pathological sufficiently to cause in a permanent manner such symptoms as habitual mouth breathing, noisy, restless sleep, night terrors, chronic mucopurulent catarrh, hypertrophic rhinitis, otitis media, spasmodic cough, enlarged cervical glands, threatening malformation of the chest and palate, habitual aprosexia and headaches, an operation should be considered. Ninety-nine per cent. of children after the operation for adenoids show a marked inprovement in a few weeks.

I have had many cases for operation where the child was partially deaf, eating very little and was listless. After operation hearing would improve and the child would eat as much in one meal is in three previously. Life became a joy rather than an endurance. Regrowth takes place in less than two per cent. of all cases. It is less likely to in older children.

Treatment.—Osteopathic treatment should be given to straighten all lesions which may have a bearing on the naso-pharynx. They will be found chiefly from the third dorsal to the occiput. The innominates with their disturbing equilibrium problems should not be forgotten. Exercise in the open air, a restricted diet and breathing exercises with the mouth closed are useful measures.

Operative treatment is essential to obtain satisfactory results in case there are any serious symptoms. Several osteopathic physicians have written me and some have told me personally that they prefer the operation for adenoids with the finger. One told me that he actually scrapes them out with the finger. Others have said they merely macerate the mass disturbing the circulation which causes atrophy sufficient to relieve all symptoms.

Others prefer the work with instruments. I like especially the Laforce instrument for the main mass, then some modification of the Gottstein curet winding up with a piece of gauze wrapped around the index finger with which I clear out any shreds.

Of course, a proper anaesthetic should be given. Nitrous oxide and oxygen; ether, chloroform and somnoform are used. For adenoids I prefer somnoform. It is simple, easily and quickly administered, giving about three to six minutes to do the work before the patient is awake. It is attended with a minimum danger.

The hemorrhage following the operation is profuse for a minute or two. A towel wet in ice water and put over the face and on the back of the neck will quickly control it.

After Care.—Ice water, cold soup and lemonade for a day with rest in bed. It all heals in about ten days. The physician should see that the nose is open, that all ear symptoms are clear or any other complications. Breathing exercises and out door sleeping are helpful.

Correspondence

RESUME OF LEGISLATION

(See April Number Also)

During the past legislative year the activities of the osteopathic profession in a legislative way were more defensive than initiative and in the few instances, where measures were initiated by our people they were started rather late, having been held in abeyance pending developments as to bills early introduced which would have affected us.

In Maine the profession made another fight for an Independent Board. It passed the Senate, but through political trickery was defeated by a few votes in the House.

Our people introduced an Independent Board bill in Colorado. The M. D.'s introduced a composite board bill; it passed and D. L. Clark, of Denver, and Rodney Wreen, of Trinidad, have been appointed on the Board. It is the style of law under which, without exception, we have at some time or other got the worst of our bargain. It is to be hoped that the Colorado law will be an exception as to this. The members appointed are true blue, non-mixing, bony lesion osteopaths, and men willing to fight for their profession and, if we are mistreated as a profession, it will be in spite of them.

In Tennessee, a preliminary examining board bill is a law. A board of educators passes upon the school credentials of all applicants who wish to practice any form of the healing art in Tennessee. Meeting the requirements prescribed by law, the applicant receives a certificate entitling him to an examination before any board of examiners, osteopathic, medical or whatever the state has. He only gets a license to practice after passing his particular board; but he must have the preliminary board's certificate to entitle him to go before any board. Such a law, it is reported, failed in Kansas because of the activity of certain Wichita and Topeka D. O.'s. Contrariwise to the state association and its appointed legislative representatives, Dr. Owens appeared with counsel and opposed the bill and without authority at all from the osteopaths of the state worked for a composite board bill. Their sole accomplishment was that the plans of the short term and correspondence school graduates who practice

osteopathy under other names were furthered and legitimate D. O.'s plans defeated. These, it would seem, especially deserve a vote of thanks from the pseudos.

In Oregon, a bill in harmony with the profession's repeated stand against our colleges teaching materia medica was passed and is a law. It withholds legal recognition of osteopathic colleges as such which teach courses in materia medica and drug prescription writing.

The Pennsylvania legislature appropriated $5,000 to the Philadelphia County Osteopathic Hospital.

In California, the bill introduced by the osteopaths to modify their present law did not pass. A Board of Health bill passed which, if signed, will give all schools a representative on the Board of Health.

Bills in which we are interested are still pending in Wisconsin, Illinois and Florida.

In addition to what was mentioned in the April number under the head of the "Pseudo Osteopath's Legislative Campaign," a "Chiropractic" bill failed of passage in Minnesota in spite of the desperate measures resorted to as indicated in the April issue.

In New Jersey pseudo osteopaths were enabled to get an amendment to the composite board law exempting all those in the state prior to April 2, 1913.

In Iowa a "Chiro" bill failed of passage in spite of the efforts of paid lobbyists and the influence of the Paliner factory. One lobbyist, it is reported, was to have received $1,500 had the bill passed.

Oklahoma killed a "Chiro" bill as did Ohio. In the latter state provision was made for their taking examination under the medical law.

The "Chiropractors" and other pseudo osteopaths got practically nothing from the California legislature in spite of the maintenance of an extensive lobby. It will be recalled that the people of California turned down a bill initiated by the "Chiros" in November. They defeated the bill by a vote of over two to one. The law should now be applied to osteopathic pretenders as it has been to medical fakirs.

The Supreme Court of North Carolina has recently upheld the osteopathic board law in that state upon the appeal of a pseudo osteopath who was prosecuted under it.

In Massachusetts, the Supreme Court has just held that the certificates granted by the "Chiropractic College" of Boston, was not a legal diploma granting institution.

In view of the many and varied legislative problems confronting it and of the particularly alluring offers made to surrender same the profession is fortunate that it has held its independence so well through the past legislative session.

As said in the April issue, if the partial success of the pseudo osteopaths will tend to wake our profession to a firmer stand for pure osteopathy and against the desecration of the osteopathic principle by short termers and correspondence school people who for mere mercenary reasons prostitute it then perhaps ultimate good may come of it.

CHAIRMAN LEGISLATIVE COMMITTEE.

CERVICAL RIB

Failing to recall the mention of cervical ribs in recent osteopathic literature, I am reporting the following case which came to my notice during a routine osteopathic examination:

Some months ago a little girl six years old was sent to me for examination following a general break down in health and inability to keep up with her work in school. During the course of physical examination, and while palpating in the lower portion of the posterior triangle of the neck for the first rib, a distinct, hard bony mass was felt on the left side which had no counterpart on the right. No tenderness was elicited and inquiry brought out the fact that nothing unusual had ever been noticed with that side of the neck, although on bringing the mother's attention to the mass she could both feel it and see the fulness caused by it. A diagnosis of cervical rib was made. This anomaly seemed to have nothing to do with the girl's condition and she made an uneventful recovery during a period of four months. Some time later an X-ray of the neck was taken and the diagnosis of cervical rib confirmed. At no time were efforts made to set this as a first rib lesion, and the mother was advised that there was no need of interference until such time as symptoms of brachial irritation should set in.

Cervical ribs are quite commonly mentioned in medica literature and if all of them are as easily palpated as was this one, it seems strange that osteopathic examination has not revealed more of them. The anatomic and histologic history of the cervical rib is well known and need not be gone into here with the exception of a brief quotation from Cunningham in which it is stated that: "In the cervical region independent centers (of ossification) are described as occurring in the anterior roots of the transverse process of the sixth and seventh vertebrae. These correspond to the costal element, and may occasionally persist in the form of cervical ribs."

J. A. VAN BRAKLE, D. O.

OREGON CITY, ORE.

THE ACADEMY OATH

Much objection has reached us concerning that portion of "The Oath of the Academy of Osteopathic Clinical Research" which requires that the academician presents monthly to the Academy a record of all completed cases, etc. It is contended that to write up fully and in detail all such cases would entail too much labor especially for one who has a large practice.

The point is well taken and the "Oath" is hereby amended to read so as to provide that applicants for fellowship report only such cases in which positive or negative results are clearly shown and from which scientific deductions anent the osteopathic philosophy can logically be drawn.

We wish also to repeat that the annual membership dues is three dollars (not ten as originally provided) and that ten dollars in advance pays in full for the five years' probation period.

O. J. SNYDER, D. O.,
PHILADELPHIA. President.

State and Local Societies

District of Columbia—Annual meeting held May 28, when following officers were elected: President, T. J. Howerton; Vice-President, Augusta Nichols; Secretary-Treasurer, Clara U. Little.

Georgia—Program of meeting held May 14 and 15 printed in May JOURNAL. Officers were elected as follows: President, C. E. Lorenz, Columbus; Vice-President, Elizabeth Broach, Atlanta; Secretary-Treasurer, Otto H. Gripe, Atlanta, re-elected.

Illinois—The Fourth District Society met recently in Bloomington. An enjoyable banquet was served after which H. H. Fryette, of Chicago, delivered an address. Business session also was held, at which A. N. Ovens, of Springfield, State President, discussed the work that had been done the past winter. The subject of Dr. Fryette's paper and demonstration was "Etiology and Treatment of Innominate Lesions." The next meeting will be held in Peoria, October 1st. J. D. Cunningham, of Bloomington, presided.

THE EIGHTH DISTRICT SOCIETY perfected an organization on May 16 when the profession in that District assembled in East St. Louis. W. A. Wood, of Centralia, is District Counsellor, and Louise C. Jennings, Centralia, is Secretary.

THE ILLINOIS STATE ASSOCIATION will hold its annual meeting in Ottawa, June 16 and 17. A splendid program has been prepared and attractive visiting speakers will be present and a large attendance is anticipated.

Indiana—A special meeting of the State Society met May 20th, in Indianapolis, when an extra session was held for the discussion of professional questions. It is announced that the sem-annual open meeting will not be held this year, the annual meeting being held as usual in October.

Iowa—At the annual meeting held in Des Moines, May 19th and 20th, R. S. Dysart, of Des Moines, was re-elected President; L. O. Thompson, Red Oak, Treasurer; T. B. Larrabee, Webster City, Secretary; Ruth Wright, Charles City, and E. T. McLaughlin, Knoxville, Vice-Presidents. F. G. Cluett was chosen delegate to the national meeting. The program as outlined in the last issue of the JOURNAL was carried out.

THE POLK COUNTY ASSOCIATION entertained the guests at the State meeting at a banquet at which R. S. Dysart presided as toastmaster. The following responded to toasts: J. S. Baughman, Burlington; B. E. Fisher, Ida Grove; Exie L. Burkart, Marshalltown; S. L. Taylor, Des Moines; Louisa Burns, Chicago.

Massachusetts—The Boston Society held its monthly meeting May 22nd, with Franklin Fiske, of New York, as the guest. His subject was "Easy Scientific Vertebral Adjustment," with demonstrations. Francis F. Joyner, of the Boston Laboratories, lectured on "Clinical Significance of Urinary Findings." G. E. Smtih discussed "The Treatment of Cancer of the Breast." Several applications for membership were received.

G. W. Avery and B. H. Proctor, of Boston, and M. W. Peck, of Lynn, recently received the medical degree from Boston and Cambridge Colleges.

Anna Louise Hicks has recently succeeded to the practice and location of Drs. Geo. H. and Mayme K. Tuttle, of Portland, Me.

Edythe F. Ashmore, Professor of Technique, at the A. S. O., gave a course in Technique under direction of the Boston Society from June 7 to June 12 exclusive. Dr. Ashmore made such a splendid impression before the New England Association at its recent meeting that this course was arranged and more than sixty osteopaths took her work, all of whom speak of it in the most enthusiastic terms. At the conclusion of her course, the society gave a complimentary reception to Dr. Ashmore in the Hotel Lenox. It was a fitting climax to the course she had given. G. W. Goode opened the exercises by a few eulogistic remarks and told what an inspiration Dr. Ashmore's work had been to the profession in New England. He was followed by J. A. MacDonald, president of the society, who also spoke with great enthusiasm of the work accomplished. Helen G. Sheehan, speaking for the women osteopaths, said that they were very proud of Dr. Ashmore's work. She was the first woman who had given time, study and research to fit herself for the work so necessary for the successful practice. Others to speak were: Alfred W. Rogers, Ada A. Achorn, Earl Scamman, C. L. Watson, Reid Kellogg, Mary B. Horn and F. A. Gave. Dr. Ashmore at the conclusion responded in appropriate remarks.

THE BOSTON SOCIETY will hold the final meeting at the Hotel Lenox, June 19, when officers will be elected. A splendid program to which L. Von H. Gerdine, of Kirksville, will contribute, has been arranged.

A post graduate course in Physical Diagnosis will be given by Robert H. Nichols in July. The work will cover two weeks, two hours a day. Fee, $15.00. Applications may be made to George W. Goode, Secretary.

The Iota Tau Sigma Fraternity of the Massachusetts College held its annual dinner June 3rd, with A. F. McWilliams as the guest of honor. The Alumni Association of the Massachusetts College held its annual reunion and dinner June 5th. Howard T. Crawford was toastmaster, and speeches were made by Rev. Francis L. Beal and Drs. L. R. Bolen, W. E. Harris, R. K. Smith, H. R. Bolan. About thirty of the alumni were present. Officers were elected: President, P. J. Wright; Vice-President, K. G. Tallant; Secretary-Treasurer, H. G. Tingley; Trustee, C. D. Thore.

Michigan—The Eastern Michigan Society met May 13th, in Saginaw. K. F. Kinney, Lapeer, discussed "Pleurisy"; F. J. Harlan, Flint, "Tubercular Glands"; Bessie Strong, Ionia, "Ethics." Many clinical subjects were examined.

Minnesota—The meeting of the Southern Minnesota Association will be held in Owatonna, June 19. S. H. Stover will preside and deliver a brief address. All members present will be expected to demonstrate some favorite method of correcting a lesion. Laura Bedwell will discuss "Uterine Displacements"; E. E. Giltner, "Osteopathic Procedures Which Relieve Pain"; M. G. Sutherlin, "Headaches, Vertigo and Neuritis"; Flora Davey, "Auto-Intoxication, Constipation, Anorexia and Nervous Prostration"; R. M. Jones, "Osteopathy and Confinement."—LILY F. TAYLOR, D. O., *Sec.*

New Jersey—The annual meeting of the New Jersey society was held in Newark, May 22. E. V. Dunnington, of Philadelphia, discussed "Surgery and Osteopathy." D. Webb Granberry, of Orange, "The New Treatment of Catarrhal Deafness." Elizabeth H. Munsey, M. D., of Brooklyn, discussed "Orificial Surgery."

At the evening session, R. M. Colborn, Newark, was elected President; F. F. Wilcox, Plainfield, Vice-President; B. F. Still, Elizabeth, Treasurer; A. L. Hughes, Bloomfield, Recording Secretary; F. W. Morris, Paterson, Corresponding Secretary; Executive Committee, C. M. Sigler, Trenton; A. P. Firth, Newark; M. Munroe, East Orange; F. F. Miner, Rutherford; H. W. Carlisle, Paterson.

New York—The New York City Society held its final meeting for the season May 22, when the following officers were elected: President, Richard Wanless; Vice-President, Ethel K. Traver; Secretary, E. B. Hart; Treasurer, A. S. Bean; Directors, T. H. Spence, R. M. Crane, E. W. Robson; Keeper of Records, Elvira Tracy; Sergeant-at-Arms, Eugene Kraus.

Ohio—The Central Ohio Association held its regular meeting in Columbus, May 14. The chief address of the evening was delivered by F. E. Corkwell, of Newark, on "Sciatica." The meeting was well attended.

THE MIAMI VALLEY ASSOCIATION met in Cincinnati, May 20th. The entire time was given to the examination and discussion of clinics, one of the most interesting being a severe form of leukemia, which was making satisfactory progress under the treatment of Clara Wernicke.—CARRIE E. MOORES, D. O., *Sec.*

Pennsylvania—The annual meeting of the Pennsylvania Association will be held at the Hotel Schenley, Pittsburgh, June 25th and 26th. Among the chief attractions will be the lectures on "Nervous Diseases," illustrated by moving pictures by J. Ivan Dufur, of Philadelphia; Geo. A. Still and L. Von H. Gerdine, of Kirksville, and A. P. Firth, of Newark. O. O. Bashline, of Grove City, Pa., will discuss "Osteopathic Obstetrics."

The business sessions will be of unusual importance to the profession in the State in view of the legislative and legal proceedings now going on. The State organization invites all members of the profession in and out of the State to attend this splendid two day meeting.

THE PHILADELPHIA COLLEGE HOSPITAL received an appropriation of $5,000 at the hands of the recent legislature and the bill is now before the Governor for his approval. If the appropriation is made, it will be, so far as the JOURNAL recalls, the first instance in which a State has made an appropriation for osteopathic activities, and it will be therefore a distinct advance and precedent which will be welcomed.

Tennessee—The annual meeting of the Tennessee Association was held in Nashville, May 21 and 22, with the program as presented in the last number. Perhaps no recent State meeting received the favorable comment or was given the amount of space by city newspapers as this meeting.

The Association went on record favoring the Harrison Anti-Drug Act, also the enactment of federal legislation prohibiting the manufacture or sale of alcohol.

At the banquet held on Friday evening, J. W. Skidmore, President, was toastmaster, and Erle Collier was master of ceremonies.

THE EAST TENNESSEE ASSOCIATION was organized May 31st, with R. McRae Echols, of Bristol, as President, and O. Y. Yowell, of Chattanooga, Secretary-Treasurer. It is hoped to hold regular meetings beginning in the near future.

Notes and Personals

X-Ray Laboratory Association—Members of the profession in Southern California have organized a co-operative X-Ray Laboratory Association, the purpose of which is to bring the profession together in standardized methods of diagnosis and to secure the most accurate possible X-Ray work. At present there are between fifty and sixty members. The Board of Control consists of the best known practitioners of osteopathy in Southern California, with R. D. Emery as Director, and M. L. Burns, Roentgenologist. It has been arranged for two internes to work

under the direction of Dr. Burns chosen from the senior class of the local osteopathic college.

The organization is welcomed by the profession in California, as it presents to them many opportunities. The cost of making the skiagraphs, when made without charge to the patient, is paid out of the profits of the organization. The profits, if any, from the organization, will be divided among the members, all of which, including the purchase of apparatus and the regulation of fees, is determined by the Board of Control.

If this works out successfully, as apparently it is doing, it should be followed in many of our larger cities. If the cost can be reduced, as on a mutual basis should be the case, and with the entire profession interested, there is no reason why sufficient work could not be done in many of our cities to justify an operator in becoming expert in this line. The pictures shown in this issue clearly indicate the value of the work. The JOURNAL passes this most excellent suggestion from Southern California on to the local organizations or the active members composing them in our larger cities throughout the country.

The Aftermath—Readers of the JOURNAL are familiar with the articles in *Harper's Weekly* by Mr. Creel, the general subject being "Making Doctors While You Wait." The *Weekly* has more recently published several letters from Chiros who express great satisfaction at what the *Weekly* is aiming at—the eradication of quack and unprepared practitioners of whatever school. They complain, however, that *Harper's* does not make it clear that it is the unqualified among the system and not the system itself that is aimed at or discredited.

In commenting upon these, *Harper's* reminds them that the A. M. A. and the A. O. A. are both reforming from within outward and suggests that they spend their spare time in getting rid of fakes within their number.

Ordinarily that is very good advice. But when the Chiros undertake to eliminate those who are not qualified for the work which they undertake to do, the question is, who will cast the first stone?

Crime from Drug Fiends—Police court records of the larger cities continue to bring to light the extent to which doping had progressed in this country. The desperation of many of these, who have been less fortunate than others of their class in securing the dope, is extreme. Yet we are told that the law is not being enforced and that by no means all of the dope users have yet become known, because they are still receiving their supply. Certainly the law went into effect none too soon.

In connection with this law there has been one omission which still needs correction. While patent medicines containing habit forming drugs must have the contents printed upon the label, they are allowed to be advertised without making the contents of the concoction known. If the law extended a little further and required that the formula appear in the advertisement of every such preparation which was advertised many who are now innocently being doped would be warned. They buy the article on its advertisement and take it on its testimonials, giving little or no attention to the fine print of the contents on the label.

This drug act, like prohibition, is not, at least for the time, going to eradicate the evil it aims at; but apparently it is having a healthy effect in bringing to the attention of the public not only the extent to which these drugs are used, but thinking ones will be reminded that if in larger quantities the drug has the effect which they see demonstrated in its users, even small or occasional doses of it cannot be helpful; and the suggestion will also be lodged that the constant use had its origin in the occasional dose of it.

Washington Decision—The JOURNAL has been favored with several letters passing between the *Northwest Medicine*, the official organ of the medical profession of the northwest, published in Seattle, and H. F. Morse, D. O., Wenatchee, one of the members on the Medical Board. The correspondence grew out of charges in the above named medical journal that osteopathic physicians so freely resorted to the use of drugs and surgery in the practice of their state that the medical profession appealed to the Attorney General for an interpretation of the Medical Practice Act. In arriving at his conclusions, the Attorney General cites several court decisions, including that venerable decision from Kentucky, in which the statement was made that the osteopathic colleges "Teach neither Therapeutics, Materia Medica nor Surgery. Bacteriology is also ignored," etc.

The editor of the medical magazine prints all of this and while practically acknowledging in his letters to Dr. Morse that he believes that this condition does not exist in the colleges at the present time, his inference is that it did exist up to two or three years ago, say up to the time of the Flexner Inspection, which also comes in as having material bearing on the case.

Dr. Morse has done excellent work in his discussion with the editor of the magazine who by using these ancient charges will make as discreditable a showing as his readers will stand for, at the same time will re-state his position if he is forced to do so.

College Play—The students of the Chicago College presented a play recently which was exceedingly well received by large audiences on both nights of the performance. The college and student body were greatly surprised at the amount of dramatic ability and talent which this play developed and the student body decided to make this an annual feature.

Fumigation Stopped—Along the same line comes the announcement made by the Health Department of the four boroughs of Greater New York, not including Brooklyn, that the Director

of the Bureau of Infectious Diseases will dispense with fumigation in the handling of these cases at least as an experiment.

For several years it has been the theory that these diseases are communicated by contact and are not air borne. Some hospitals do not hesitate to have all manner of infectious diseases in the same ward, the cases occupying cots six or eight feet from one another. Smallpox, measles, scarlet fever, etc., are thus treated. All state- scarlet fever, etc., are thus treated. All attendants, however, are required to be very careful that nothing which has been in contact with one patient comes in contact with another until thoroughly sterilized.

Now the plan is instead of fumigating rooms in which cases of contagious diseases have been confined to use soap and water liberally. In other words, enforce cleanliness. Hence, an army of "fumigators" has been dispensed with in New York. The fact also comes out that germ life outside of some "carrier" seems to be short lived, and that the dangerous period in all infectious diseases is very much earlier than was formerly supposed. In fact the danger period is in the coryza state in most cases, before the diagnosis can be made. Hence, the fumigation is all done too late.

We appear to be getting nearer to the old-time simple truths of cleanliness, after all, and some day the human body itself is going to be given more concern than infective agents.

More Idols Smashed—Columbia University (New York) professors have recently been making elaborate studies into what constitutes vitiated atmosphere or what causes the depressing effects from so-called "bad" air. Their conclusions are that temperature of the atmosphere and humidity are more responsible for the depressing effects than the respired gases, etc. Experiments on the amount of work which muscles of men and animals can do in given temperatures and given conditions of humidity have been made.

Two series of experiments were made, one with the temperature at 21 centigrade (69.8 F.) with an approximate humidity of 54 per cent., and the other at 33 centigrade (91.4 F.) with humidity at 89 per cent. These conditions about represent comfortable atmospheric conditions, and the air of a hot, humid day, respectively.

As an outcome, there was a marked diminution in both the amount of work performed and the working power. Under the latter conditions also the body temperature rose considerably. Medical authorities seem to agree that this indicates that the heat and humidity of close quarters rather than the conditions of the air as to gases, etc., are the cause of the depression felt under such conditions.

Personals—Margaret Loring, La Salle, Ill., announces removal to Polo, Ill. She will be succeeded in the La Salle practice by Mary Noyes, who also conducts a successful practice at Ottawa, Ill.

James L. Holloway, Dallas, Texas, delivered the address before the graduating class of the A. S. O. and reports a highly enjoyable visit to the school and especially to the Old Doctor. About one hundred were graduated in this class, whom Dr. Holloway speaks of as being remarkably fine looking men and women. Dr. Holloway's son enters the naval academy at Annapolis, July 1st.

E. D. Heist's many friends will be glad to learn that his wife is recovering speedily from a severe case of peritonitis. He was assisted in the management of the case by A. D. Sinclair, D. O., of Toronto, and their efficient service brought about an excellent recovery.

E. H. Bean has been designated publicity representative for the Central Ohio Osteopathic Society. Dr. Bean has also prepared to specialize in naso-pharyngeal work and has recently put in a most complete office outfit.

Harriet A. Whitehead, of Wausau, Wis., will spend the summer months in a tour of the West visiting the expositions at San Diego and San Francisco, also all of the best known points of interest in the far West. She is a delegate of Wisconsin to the Portland meeting of the A. O. A. In her absence her practice will be cared for by Ida G. Tarkleson, a recent graduate of the A. S. O.

F. M. Plummer, announces a summer office at 110 Fifth Avenue, Belmar, N. J., where his family is spending the summer. He will also spend certain days at his Orange, N. J., office.

Katherine Talmadge, of Washington, D. C., announces retirement from practice and introduces Mary Walker Eaton, who will continue the practice at Stoneleigh Court, Washington, D. C. On June 22nd, Dr. Talmadge will become the bride of Col. Philip Harvey, U. S. A.

Katherine G. Lynch, of Los Angeles, has recently passed the examination for examining physician in the Los Angeles Public Schools, passing with the highest average among sixty applicants, which places her first on the eligible list. Dr. Lynch recently passed the Civil Service Examination of Los Angeles for the Juvenile Detention Home.

Married—At St. Louis, Mo., April 26, at the home of the bride, Mrs. Sallie Frances Bowles to Dr. W. W. Grow, of St. Joseph, Mo.

Born—To Dr. and Mrs. C. B. Ingalls, of Pittsfield, Ill., May 23rd, a daughter.

To Dr. and Mrs. R. D. Rifenbark, Ortonville, Minn., June 2nd, a daughter.

Wanted—Position as assistant or to take charge of practice during vacation by lady, Graduate, C. O. P. S., Los Angeles. Would be willing to consider any position in which her training would be of use. M. A. R., c/o JOURNAL A. O. A., Orange, N. J.

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Weed, Dana L. (A), Calexico.

CONNECTICUT

Barstow, Myron B. (A), Scotland.

FLORIDA

Larmoyeux, Julia A, St. James' Bldg., Jacksonville.

ILLINOIS

Bedford, Elizabeth J. (A), 27 E. Monroe St., Chicago.
Carlin, W. R. (A), Rushville.
Roderick, John S. (A), La Harpe.
Snyder, Clarence W. (A), Ashmore (not located).
Tilley, Chas. E. (A), Landaner Bldg., Lincoln.

INDIANA

Kattman, Bertha (A), 518 S. Forest Ave., Brazil.
Shepardson, G. Byron (A), Huttington.
Soldner, Wildas H. (A), Berne (not located).
Von Gunten, Rufus (A), Berne.

IOWA

Chapman, J. G. (A), Washta.
Hinchman, A. W. (DMS), Eldon.
Lelander, Anna E. (A), Lake View (not located).

KANSAS

Gartrell, I. D. (A), Speed.
Gleason, B. L. (A), 323 W. 6th St., Larned.
Martin, Edmond, J. (SS), Ellsworth.
Smith, Mary Pearl (DMS), Fredonia.

MAINE

Frost, Harold P. (A), 94 Gamage Ave., Auburn.

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Graves, Frances (A), 110 Main St., Greenfield.
Richardson, H. L. (A), 58 Main St., Winter Hill.

MICHIGAN

Cook, Chas. C. (A), 1022 N. Washington Ave., Iaginan.
Green, Genevea Walker (DMS), 241 E. Washington Ave., Ionia.
Irish, Harry L. (A), 708 Gratiot Ave., Alma.

MINNESOTA

Richardson, Flora May (A), Auditorium Bldg., Minneapolis.

MISSOURI

Bennett, Silas M. (A), Farmers' Savings Bank Bldg., Marshall.
Boyd, Ethel (A), Kirksville (not located).
Brown, Rolla H. (A), Kirksville (not located).
Eichhorn, Edward L (A), Kirksville (not located).
Elder, Adrian (A), Kirksville (not located).
Elkins, Geo. S. (A), Kirksville (not located).
Fite, Lewis (A), 3335 Paseo, Kansas City.
Grant, Leanora (A), Kirksville (not located).
Harris, Katherine, 1107 Ets St., Sedalia.
Hartner, Chas. (A), Kirksville (not located).
Hutchinson, H. F. (A), Kirksville (not located).
Kesler, G. B. (A), Centralia.
Martz, D. (A), Breckenridge Bldg., Huntsville.
Meader, Emma Laura (A), Kirksville (not located).
Oldeg, Harry W. (A), Kirksville (not located).
Parker, Ira L. (A), Kirksville (not located).
Peloubet, Helen R. (A), Aux Vosse.
Pettifer, A. (A), Springfield.
Ralston, J. L. (A), Kirksville (not located).
Rimol, Anna (A), Kirksville (not located).
Robinson, Chas F. (A), Kirksville (not located)
Russell, Chas. G. (A), Lexington (not located).
Scharff, A. O. (A), Kirksville (not located).
Spangler, Clyde B. (A), Maitland.
Thaison, Adellina (A), Kirksville (not located).
Turner, Dudley Breed (A), Linneus.
Vosseller, Clarence D. (A), Kirksville (not located).

MONTANA

Bruner, Leonora S. (A), Powers Bldg., Helena.

NEW YORK

Harrington, Alice E. (A), 216 Baynes St., Buffalo.
Neilsen, Hans (A) 273 S. Broadway, Yonkers.

NORTH CAROLINA

Spalding, J. Lucena (A), Ridgecrest.

NORTH DAKOTA

Tarr, Joseph W., Lidgerwood.

OHIO

Boyer, Thos. A., Payne.
Demarest, E. M. (A), 11 So. Union St., Delaware.
Dilatosh, Frank Allen (A), Lebanon (not located).
Parker, Ira L. (A), Belleville (not located).
Reinhart, C. W. (A), Wapokoneta.
Roberts, I. M. (A), Marysville.
Weaver, H. Buck (A), 447 Linden Ave., Miamisburg.
Wilson, John H. (SS), Ohio Bldg., Toledo.

OREGON.

Jackson, Charlotte M. (A), Corvallis.
Sears, Chas. A. (LA), Lebanon.

VIRGINIA

Bell, Annie W. (A), Wilburn (not located).

AUSTRALIA

Harris, Neville E. (A), 450 Collins St., Melbourne.

CANADA

Gossman, Wm. A., 167 Downie St., Stratford, Ont.

done

CHANGES OF ADDRESS

Avery, Frank E., from Masonic Temple to 816 Myrtle St., Erie, Pa.

Beckett, O. F., from Hiawatha to Brewster, Kan.

Bissonette, Irene, from Buffalo, N. Y., to 611 Tenth Ave., S., Minneapolis, Minn.

Bloxham, H. P., from 319 East Thirty-seventh St., to 1050 Hawthorne Ave., Portland, Ore.

Clark, Julia V. Frey, from 1645 East Sixteenth St., to Empire Bldg., Denver Colo.

De Shazer, J. Dalton, from Cincinnati, O., to Craddock Bldg., Redding, Calif.

Freeman, H. M., from Broadway Market Bldg. to 2082 E. Jefferson Ave., Detroit, Mich.

Gordon, L. E., from Des Moines to Fairfield, Iowa.

Hawkins, Chas. R., from Barnard to Minneapolis, Kan.

Jones, Sarah E., from 71 Seventeenth Ave. to 465 Ellison St., Paterson, N. J.

King, T. M., from Woodruff Bldg. to Sanders Bldg., Springfield, Mo.

Larsh, M. M., from Shubert Bldg. to 921 Harrison St., Kansas City, Mo.

Peebles, R. B., from Kalamazoo, Mich. to Powers Bldg., Decatur, Ill.

Peterson, Herbert S., from Los Angeles, Calif., to 6131 S. Maplewood Ave., Chicago, Ill.

Rasmussen, C., from Des Moines to Panora, Iowa.

Swartz, W. C., from Odd Fellows Bldg. to Adams Bldg., Danville, Ill.

Warner, S. E., from Board of Trade Bldg. to Fletcher Trust Bldg., Indianapolis, Ind.

Yung, Philip H. and Gertrude Carrothers, from Macfarlane Bldg. to 142 N. Center St., Cumberland, Md.

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PORTLAND, 1915

—VIA—

Glacier National Park

One of the most attractive features of the trip by the Chicago-Portland Special of the American Osteopathic Association—which is to set out for Chicago via the Chicago Great Western Railway and thence from St. Paul, Minneapolis, to the Portland Convention is to follow via Glacier National Park the "See America First" route of the Great Northern Railway—is the opportunity proffered the Osteopaths at the close of the Convention of returning home by way of the California Expositions. Especially of interest in this connection is the new Great Northern Pacific Steamship Company, which operates the new "Palaces of the Pacific," the steamships "Great Northern" and "Northern Pacific," down the Pacific Ocean between Portland and San Francisco via Flavel-Astoria and which continues the travel service of the Great Northern Railway through to California.

The new Great Northern Pacific Steamship Company inaugurated service on March 15th, 1915. Aboard ships of the most luxurious type, a speedy and ideal sea voyage of a night and a day—and a "railroad time" run of twenty-six hours that accomplishes the Portland-San Francisco trip in the same number of hours as are necessary to the schedules of the fastest limited trains between these terminals—such, briefly, is this new service.

The harbor of Flavel-Astoria, Oregon, from which the "Great Northern" and the "Northern Pacific" sail 'Frisco bound—reached from Portland by "North Bank" steamship expresses—which follow a scenic track alongside the lower Columbia—lies close to the mouth of the Columbia River, twelve miles from the Pacific. Astoria was the first American settlement in the Northwest—in 1811. Astor founded his adventurous fur city—today it's a busy port. Nearby, on the Pacific—a delightful side trip—are the Clatsop Beach resorts, Gearhart and Seaside.

Out of the Columbia's mouth the route follows past Fort Stevens, Fort Canby, Cape Disappointment. Then along the Jetties the course lies across the Columbia Bar—and out to sea.

Tillamook Head is "land's end"; from off Tillamook the course for 600 miles is almost due south through the long swells of the blue Pacific—for 300 miles down the coast of Oregon and for another 300 miles down the coast of California. Land is sighted off Cape Blanco, and again off Cape Mendicino; for the most of the way, though, land is below the horizon and the voyage is genuinely a sea-voyage.

The final hours are particularly fine—the run past the Farallone Islands, through the Golden Gate, and past the Panama-Pacific Exposition up the Bay of San Francisco.

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The "Great Northern" and her mate are the two finest ocean-going express steamships that fly the American flag. Sister ships, of all-steel construction, each has a length over all of 524 feet, and each, measuring from keel to boat deck sixty feet, carries six decks—each a ship of 12,000 tons. Each ship has accommodations for 856 passengers, and for a crew of 200. At the same time, being designed for speed, with a beam of but sixty-three feet, these ships in gracefulness of line are very like two giant yachts.

Aboard these ships, the "A" deck, located in the super-structure, is given over to the public rooms, and is a remarkable recreation and observation deck. Forward—glass-walled—is an observation gallery and the lounge. Aft—in another outlook place—is the smoke room. The "B" and "C" decks are devoted to the staterooms—single and ensuite, rooms with bath, parlor rooms with brass beds—each deck in itself a metropolitan hotel. All of the "D" deck is devoted to the dining rooms and the kitchens. Through all these decks the fittings—furnitures, panelings, tapestries, rugs, leathers, art glass—are luxurious.

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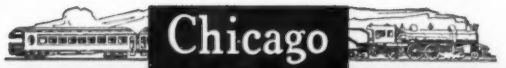

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